

The Commercial Car Journal

VOLUME XXVI

PHILADELPHIA, JANUARY 15, 1924

NUMBER 5

— 1924 — **MOTOR TRUCK SHOW**

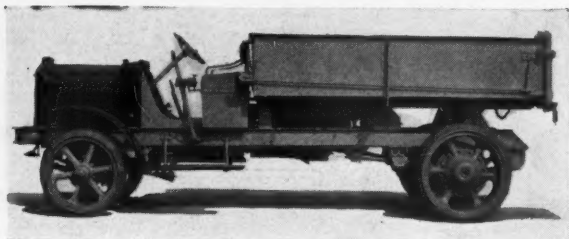
Q THE ONLY NATIONAL MOTOR TRUCK SHOW OF THE YEAR.

Q Dedicated to the Dealer and the Motor Truck Salesman who is desirous of obtaining information that will help him become more intimately acquainted with the variety of special-purpose trucks, parts and equipment in the field.

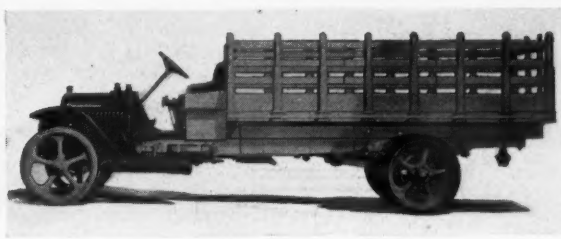
Q Read the issue from cover to cover and thereby obtain the maximum value from the Show.

1924 MOTOR TRUCK SHOW

THE WHITE COMPANY, CLEVELAND, OHIO



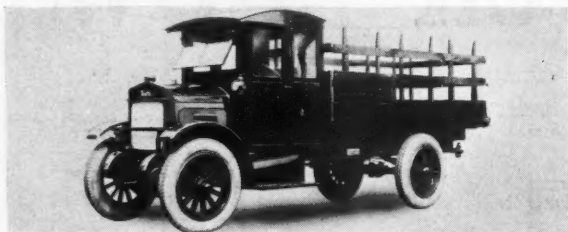
Model 45; 5 Tons
With power-dumping body



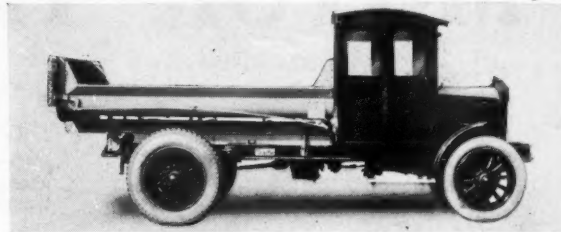
Model 20; 2 Tons
Standard stake body, 168 inch wheelbase

Complete Line: $\frac{3}{4}$, 2, $3\frac{1}{2}$ and 5 Ton

TRAFFIC MOTOR TRUCK DIVISION, NATIONAL MOTORS CORP., ST. LOUIS, MO.



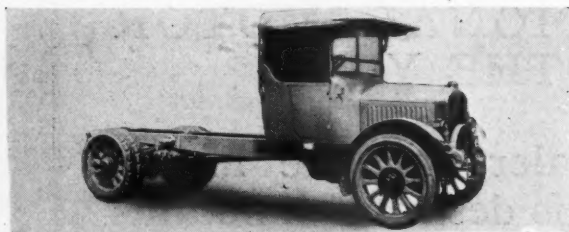
4000 Lb. Model, Standard Stake Body
Ideal for general hauling



Contractors' Dual Transmission Model
6000 lb. cap.; steel dump body; lowest gear ratio 181.1

Complete Line: $1\frac{1}{2}$, 2 and 3 Ton

ADOLPH SAURER, INC., NEW YORK



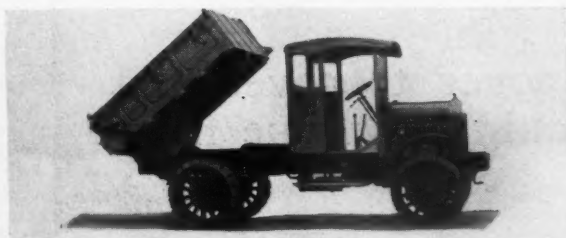
$6\frac{1}{2}$ Ton Chassis
Direct bevel gear drive, single reduction, with engine brake

Complete Line: $2\frac{1}{2}$, $3\frac{1}{2}$, 5 and $6\frac{1}{2}$ Ton



Three-Way Dumping Truck
Same chassis specifications as for $6\frac{1}{2}$ ton

CORBITT MOTOR TRUCK CO., HENDERSON, N. C.



Corbitt $1\frac{1}{2}$ Ton Model Short Wheel
Automatic dump truck with underbody hoist

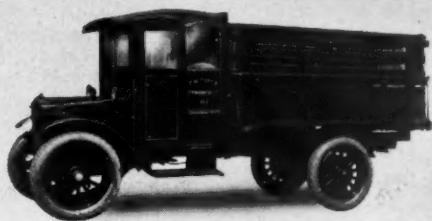


Corbitt $2\frac{1}{2}$ Ton Model
Continental engine; Brown-Lipe transmission;
Sheldon Axles

Complete Line: $\frac{3}{4}$, 1, $1\frac{1}{2}$, $2\frac{1}{2}$, 3, 4 and 5 Ton

1924 MOTOR TRUCK SHOW

LUEDINGHAUS QUALITY MOTOR TRUCKS, ST. LOUIS, MO.



1 Ton Truck
Has farm bed with removable cattle rack

Complete Line: 1, 1½, 2, 3½, 5 and 7 Ton



2-2½ Ton Motor Truck
Equipped with a special stake body to haul groceries

SELDEN TRUCK CORP., ROCHESTER, N. Y.



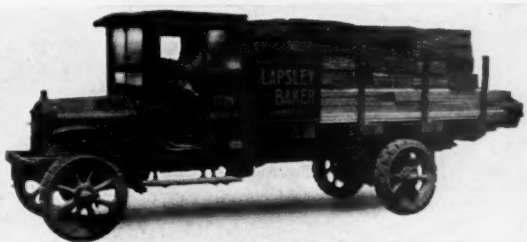
Street Car Type, Model 52
29 passengers. Speed 30 miles per hour

Complete Line: 1½, 2½, 3½ and 5 Ton



Model 70-B; 3½ Ton Dump Truck
Capacity 4 cu. yard. Dual-range transmission

THE GARFORD MOTOR TRUCK CO., LIMA, OHIO



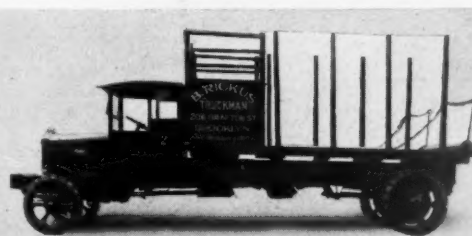
Model 70 H Chassis on Which is Mounted a Stake Body

Complete Line: 1, 1½, 2½, 4, 5 and 7½ Ton



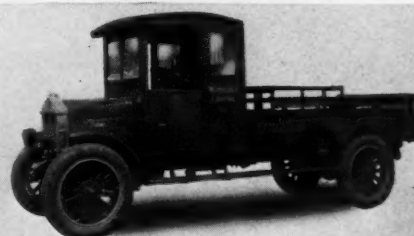
Model 51. 181 in. Wheelbase
With 23-passenger Superior De Luxe body

RAINIER MOTOR CORP., FLUSHING, N. Y.



Special Lumber Truck
Capacity 6-7 ton. Extra long wheelbase

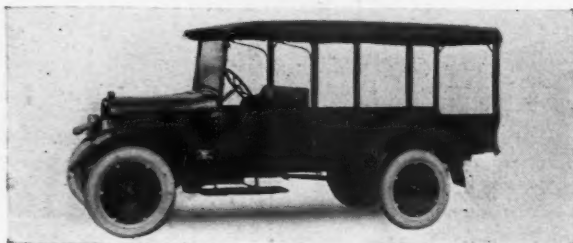
Complete Line: ¾, 1, 1½, 2, 2½, 3½ and 6 Ton



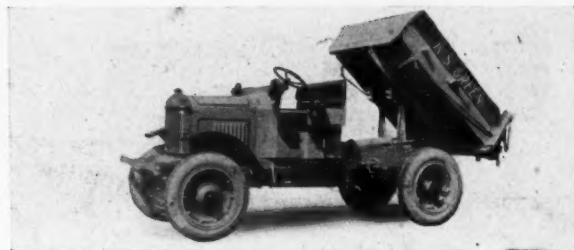
Public Service Special
1 ton. Speed 30 m. p. h.

1924 MOTOR TRUCK SHOW

STEWART MOTOR CORP., BUFFALO, N. Y.



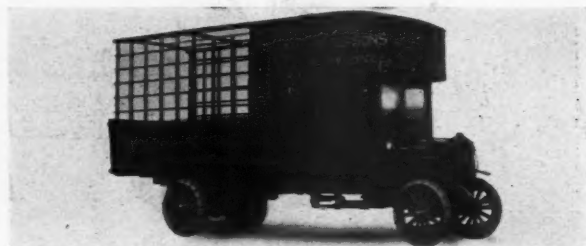
Model 16. 1 Ton Speed Truck
Standard covered express. Cord tires, electric lights
and starter



Model 7XT. Contractors' Body
124 in. wheelbase, St. Paul 2 yd. body and underbody hoist

Complete Line: 1, 1¼, 1½, 2½ and 3½ Ton

GARY MOTOR CORP., GARY, IND.



2½ Ton With Furniture Body



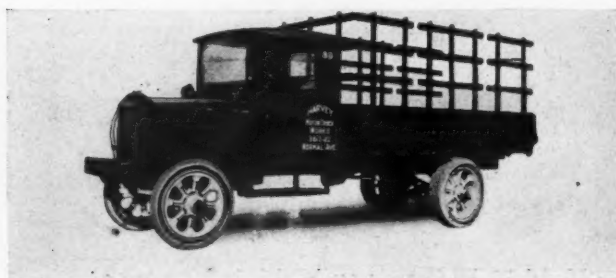
2½ Ton Long Wheelbase Chassis

Complete Line: 1, 2, 2½, 3½ and 5 Ton

HARVEY MOTOR TRUCK WORKS, HARVEY, ILL.



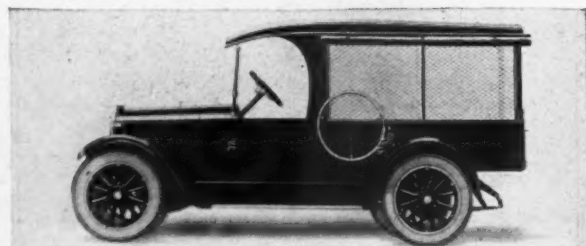
6 Ton Tractor, Model WFT



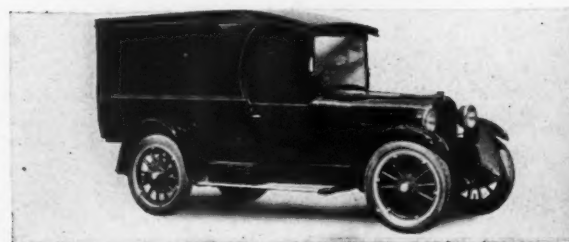
**Harvey 2½-3 Ton With Removable Stakes
and Sides**

Complete Line: 2, 2½, 3½, 6 and 10 Ton

DODGE BROTHERS, DETROIT, MICH.



Dodge 1500 Lb. Chassis With Screen Side Body



**Dodge 1500 Lb. Chassis With Full
Side Panel Body**

Complete Line: ¾ Ton

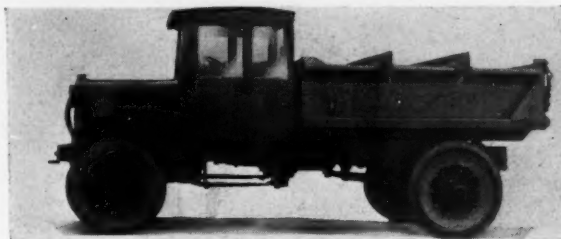
1924 MOTOR TRUCK SHOW

THE GRASS PREMIER TRUCK CO., SAUK CITY, WIS.



Model 60. Heavy Duty
1½ ton capacity. Maximum speed 35 m. p. h.

Complete Line: 1, 1½, 2, 2½ and 3½ Ton



Contractors' King, Model 90
3½ tons. Capacity: 3 cu. yards

UNITED MOTORS PRODUCTS CO., GRAND RAPIDS, MICH



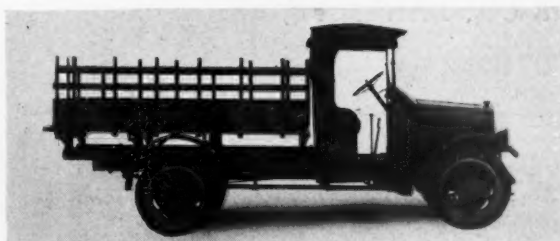
3 Ton Tank Model
Capacity: 1000 gallons

Complete Line: 1, 1½, 2, 2½ and 3½ Ton



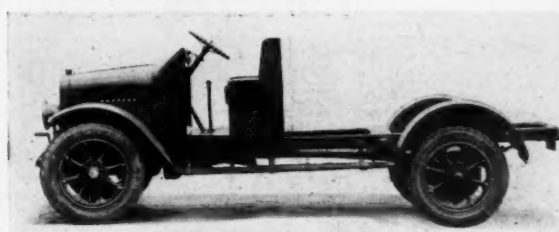
Road Builders' One Batch Special
2 ton capacity: Model 30B. Speed 40 m. p. h.

WATSON TRUCK CORP., CANASTOTA, N. Y.



Model D-8. 1 Ton Truck
With stake rack body, cab and windshield

Complete Line: 1, 3½, 5 and Tractor Truck



Watson Model D
1 ton truck chassis

SERVICE MOTORS, INC., WABASH, IND.



Model 25. 1¼ Ton All-Purpose
Closed cab. Express body. Full length top

Complete Line: 1¼, 1½, 2, 3, 4 and 6 Ton Capacity, With Special Bus and Contractors' Chassis



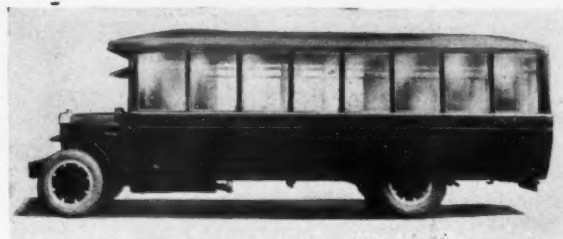
Model 81. 4 Ton Capacity
Van body and closed cab

1924 MOTOR TRUCK SHOW

UNION MOTOR TRUCK CO., BAY CITY, MICH.



Union Cross Country
Model FVL, 2½ ton capacity



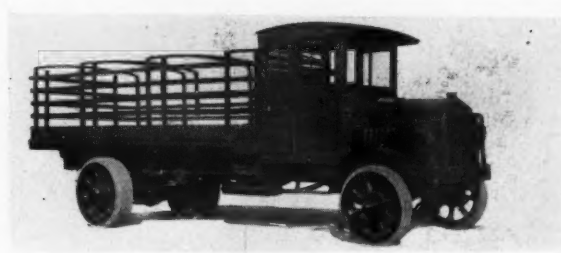
Union Model FWC
30 passenger bus

Complete Line: 2½ and 4 Ton

NATIONAL STEEL CAR CORP., LTD., HAMILTON, CAN.



Model NB. 3½ Ton
Municipal truck with Mead-Morrison winch and 44 x 10 rear pneumatic tires



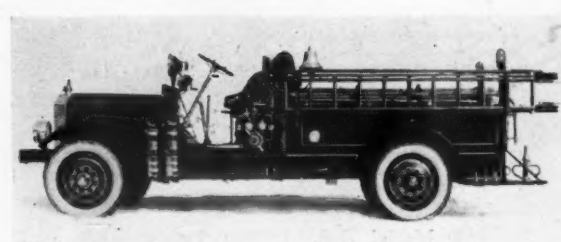
Model OA. 5 Ton
Standard commercial job. Special stake body

Complete Line: 1, 1½, 2½, 3½ and 5 Ton

THE KEARNS-DUGHIE MOTORS CO., DANVILLE, PA.



Model N1. 2 Ton Chassis



Model M. Special Fire Apparatus Chassis

Complete Line: 1, 1½ and 2 Ton

WITT-WILL CO., INC., WASHINGTON, D. C.



Model N. 1½-2 Ton
Special body, removable sides, for face brick

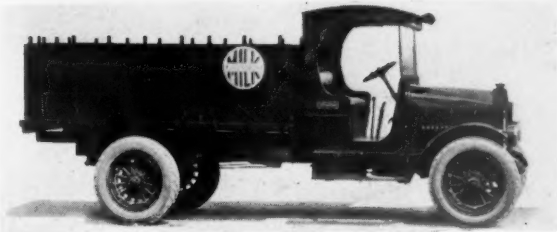


Model S. 2½-3 Ton
With special built refrigerator body

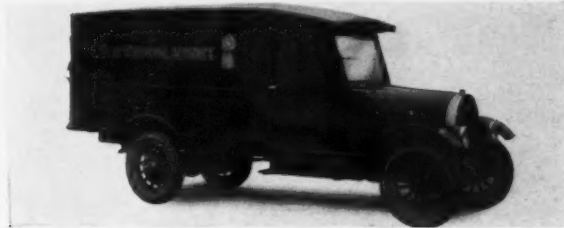
Complete Line: 1½, 2, 2½ and 3 Ton

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THE SANFORD MOTOR TRUCK CO., SYRACUSE, N. Y.



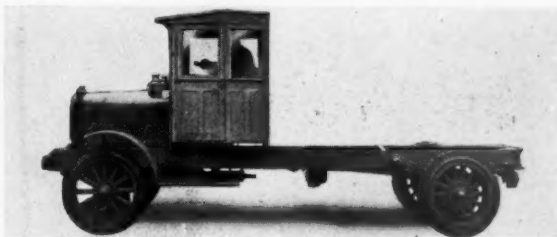
Model W-15. 1½-2 Ton
Special solid rack section body



Model W-10. ¾-1½ Ton
Six cylinder speed truck

Complete Line: 1, 1½, 2½, 3½ and 5 Ton

TOPPINS TRACTOR TRUCK CO., CHICAGO, ILL.



Model L. 3½ Ton Capacity
Fordson power plant



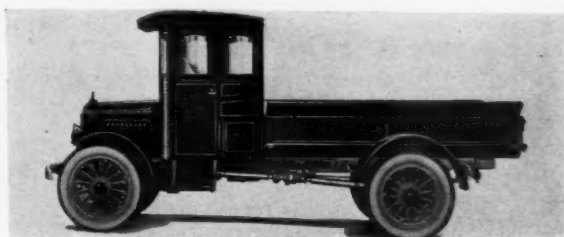
Model K. 2½ Ton Capacity
Fordson power plant

Complete Line: 2, 2½ and 3½ Ton

TRANSPORT TRUCK CO., MOUNT PLEASANT, MICH.



5 Ton Contractors' Model
Cab with wood underbody hoist



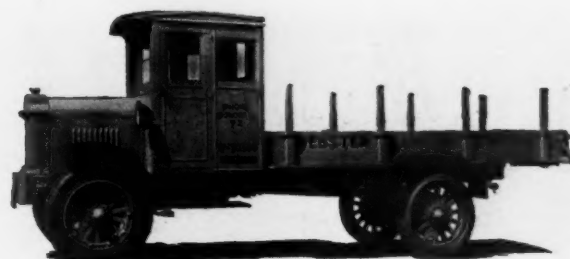
General Utility, Model 26
1½ ton job for general delivery purposes

Complete Line: 1, 1½, 2, 3, 3½ and 5 Ton

BETHLEHEM MOTORS CORP., OF NEW YORK, ALLENTOWN, PA.



Model KN. 1 Ton Panel Job
Special body for bakers and confectioners



Model GN. 2 Ton Lumber Job
With closed cab and special body

Complete Line: 1, 2 and 3 Ton

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OLYMPIC MOTOR TRUCK CO., TACOMA, WASH.



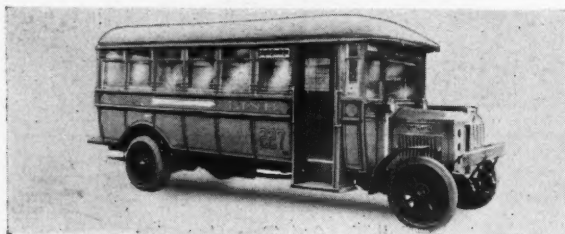
Olympic 2½ Ton Job
Long distance moving van



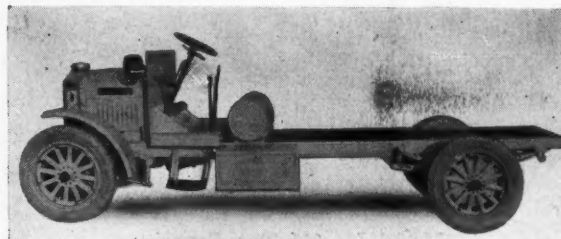
Olympic 2½ Ton Job
Special body for hauling sawdust, shavings and fuel for large buildings

Complete Line: 2½ Ton

CLINTON MOTORS CORP., READING, PA.



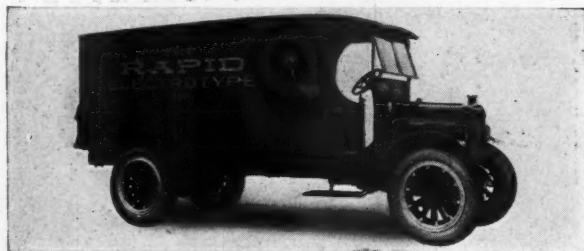
Clinton 3½ Ton Bus Job



Clinton Model 20. 1 Ton

Complete Line: 1¼, 2, 3, 4, 5 and 7 Ton

THE G. A. SCHACHT MOTOR TRUCK CO., CINCINNATI, OHIO



Schacht "Lightweight Champion"
Carrying capacity 1½ to 2½ ton



Schacht 3 Ton Model
"Ten Speed" transmission and four bearing engine

Complete Line: 1½, 2, 3, 4 and 5 Ton

DAY-ELDER MOTORS CORP., NEWARK, N. J.

PATRIOT MANUFACTURING CO., HAVELOCK, NEB.



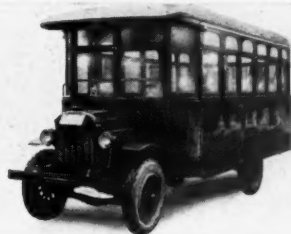
Model FN. 4 Ton
Chassis carrying capacity, including body, 9000 lbs.
Complete Line: 1, 1½, 2, 2½, 3½ and 5 Ton



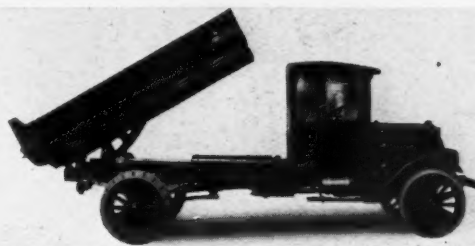
3 Ton Oil Field Special
Model 8W. 160 in. wheelbase; extra long loading space
Complete Line: 1, 2 and 3 Ton

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THE DEFIANCE MOTOR TRUCK CO., DEFIANCE, OHIO



19 Passenger Bus Job
6-cylinder engine. Tires 32 x 6 and 34 x 7



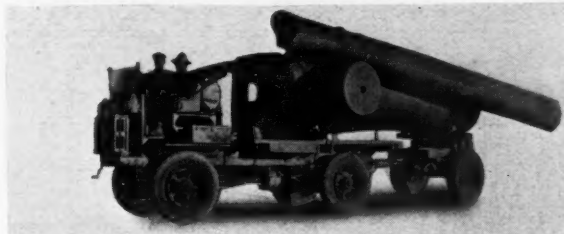
3 Yard Dump Job
3 ton chassis equipped with Wood Underbody Hoist

Complete Line: 1¼, 1½, 2 and 3 Ton

FOUR-WHEEL DRIVE AUTO CO., CLINTONVILLE, WIS.



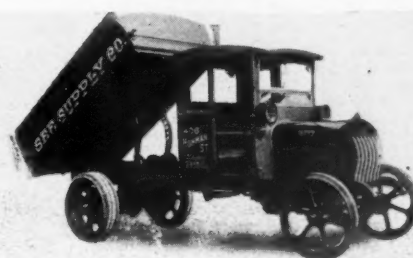
FWD 3 Ton Stake Job
With special body for milk



FWD 3 Ton With Semi-Trailer
Hauling boiler and stack

Complete Line: 3 Ton

BETZ MOTOR TRUCK CO., HAMMOND, IND.



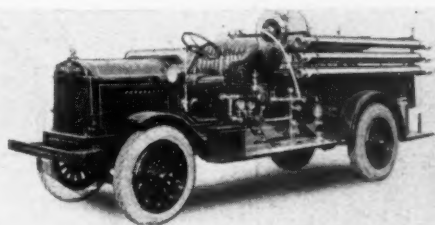
Model D-3. 2½-3 Ton Capacity

Complete Line: 1 and 2½ Ton



Model J-3. 1-1½ Ton Capacity

TWIN CITY CO., MINNEAPOLIS, MINN.



2 Ton Truck Chassis
Equipped with Northern fire apparatus

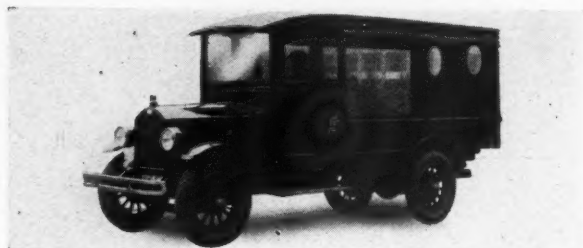


2 Ton Truck Chassis
With 18 passenger school bus body

Complete Line: 2 and 3½ Ton

1924 MOTOR TRUCK SHOW

MASTER MOTORS CORP., CHICAGO, ILL.



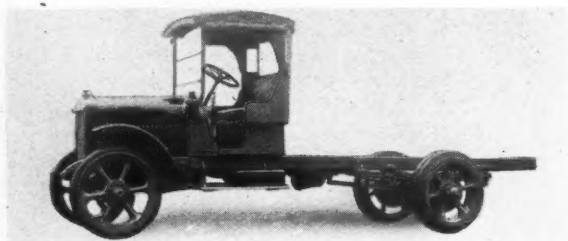
Model 11. Capacity 2500 Pounds
Frame 9 ft. behind seat with special canopy top express body



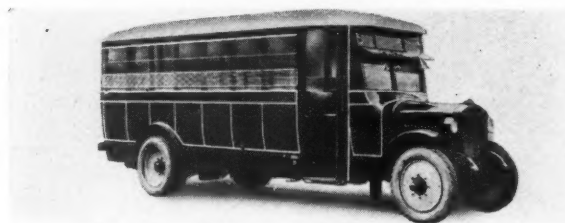
Model 41. Capacity 6250 Pounds
7 in. channel frame. Bumper and radiator, guard standard equipment

Complete Line: $1\frac{1}{4}$, $1\frac{1}{2}$, $2\frac{1}{2}$, $3\frac{1}{2}$, 5 and $5\frac{1}{2}$ Ton

ACME MOTOR TRUCK CO., CADILLAC, MICH.



Model 60-L. Maximum Capacity 6000 Pounds
Standard open cab, curtains and windshield



Model K. Bus Chassis
Complete with twenty-five passenger bus body

Complete Line: 1, $1\frac{1}{2}$, 2, 3, $3\frac{1}{2}$, $4\frac{1}{2}$ and $6\frac{1}{4}$ Ton

ATTERBURY MOTOR CAR CO., BUFFALO, N. Y.



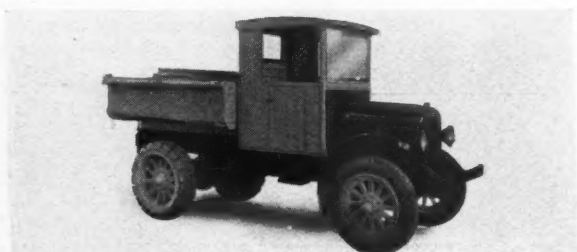
Atterbury Model 22D. $3\frac{1}{2}$ -4 Ton
Special ice cream body



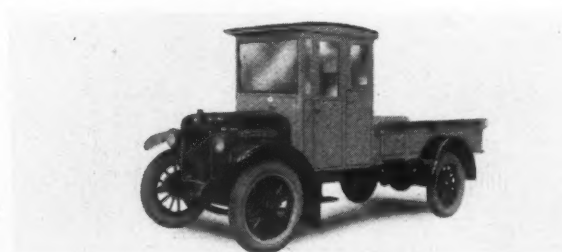
Atterbury Model 22C. $2\frac{1}{2}$ -3 Ton
Standard chassis with enclosed driver's cab and three compartment gasoline tank

Complete Line: $1\frac{1}{2}$, $2\frac{1}{2}$, $3\frac{1}{2}$ and 5 Ton

RUGGLES MOTOR TRUCK CO., SAGINAW, MICH.



Ruggles Road Builder
Capacity $2\frac{1}{2}$ cu. yds. Turning radius 17 ft.



Ruggles $\frac{3}{4}$ Ton Go-Getter
Closed cab and express body

Complete Line: $\frac{3}{4}$, $1\frac{1}{4}$, 2 and $2\frac{1}{2}$ Ton

1924 MOTOR TRUCK SHOW

OLD RELIABLE MOTOR TRUCK CORP., CHICAGO, ILL.



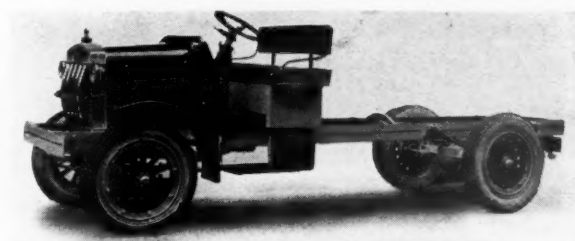
Standard Dump Truck. 3 1/2 Ton Model C
Built for extra heavy service and abuse



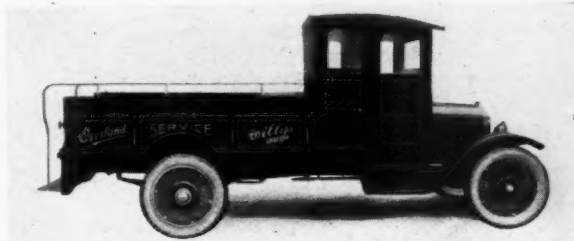
Model C. 3 1/2 Ton, Long Wheelbase
Built for long, heavy service

Complete Line: 2 1/2, 3 1/2, 5 and 6 Ton

PENN MOTORS CORP., BRIDGETON, N. J.



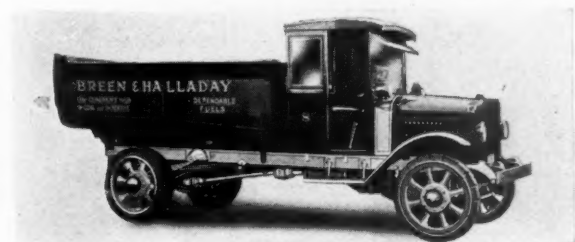
Penn 2 Ton Chassis
With Ford engine and 3-speed sliding gear transmission



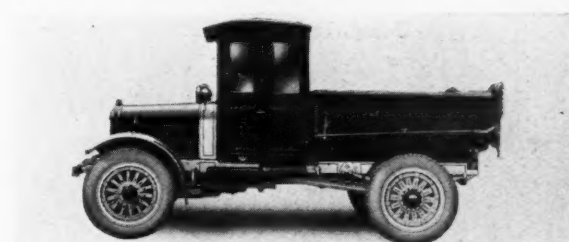
Overland 1 Ton Service Job
Built for Overland dealers by the Penn Motors Co.

Complete Line: 1 and 2 Ton

REPUBLIC MOTOR TRUCK CO., ALMA, MICH.



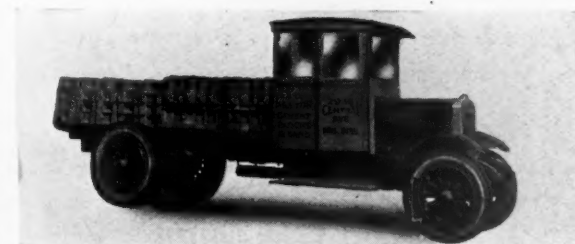
Republic Model 20
With underbody hoist and steel coal body



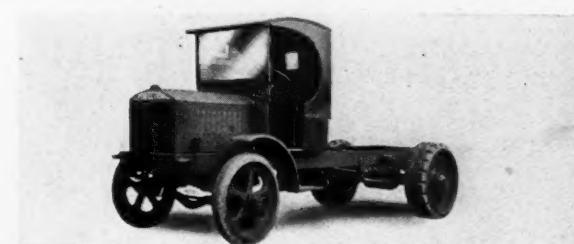
Republic Model 19
Road builder; steel body; 19 ft. turning radius

Complete Line: 1 1/4, 2, 3 and 4 Ton

PERFECTION TRUCK CO., MINNEAPOLIS, MINN.



Model C. 2 1/2 Ton Capacity



Model E. 5 Ton Capacity

Complete Line: 3/4, 1 1/4, 2, 3, 4 1/2 and 5 Ton

1924 MOTOR TRUCK SHOW

WARD MOTOR VEHICLE CO.
MT. VERNON, N. Y.



Ward Type WM Electric
Special milk delivery body

Complete Line: 2, 2½, 3½, 5, 7, 10 and 14 Ton

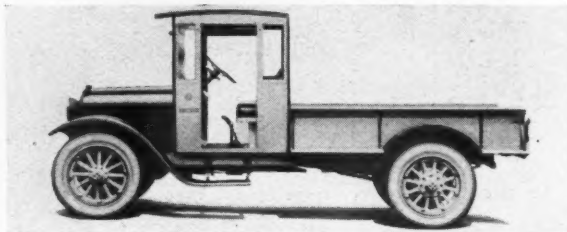
KELLAND MOTOR CAR CO.
NEWARK, N. J.



Model BT. ¾ Ton Capacity
Standard panel body

Complete Line: ½, ¾ and 1 Ton

DURANT MOTORS, INC.
LONG ISLAND CITY, N. Y.



Mason Road King
Two wheelbases: 130 and 150 in.

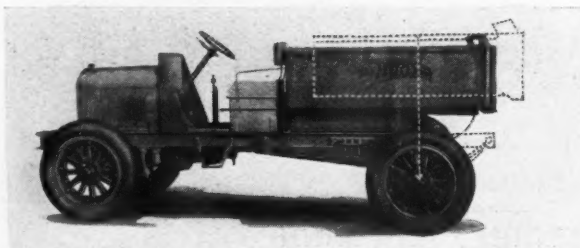
Complete Line: 1 Ton

O'CONNELL MOTOR TRUCK CO.
WAUKEGAN, ILL.



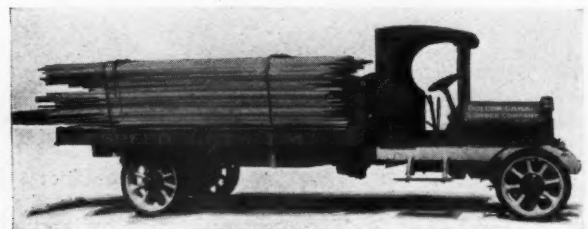
Two-Way Drive Truck
Built exclusively for contractors
Complete Line: 2½ and 5 Ton

THE HUG COMPANY
HIGHLAND, ILL.



Hug Model H Contractors' Job
Low center of gravity; two capacities
Complete Line: 1½ and 2 Ton

KENWORTH MOTOR TRUCK CORP.
SEATTLE, WASH.



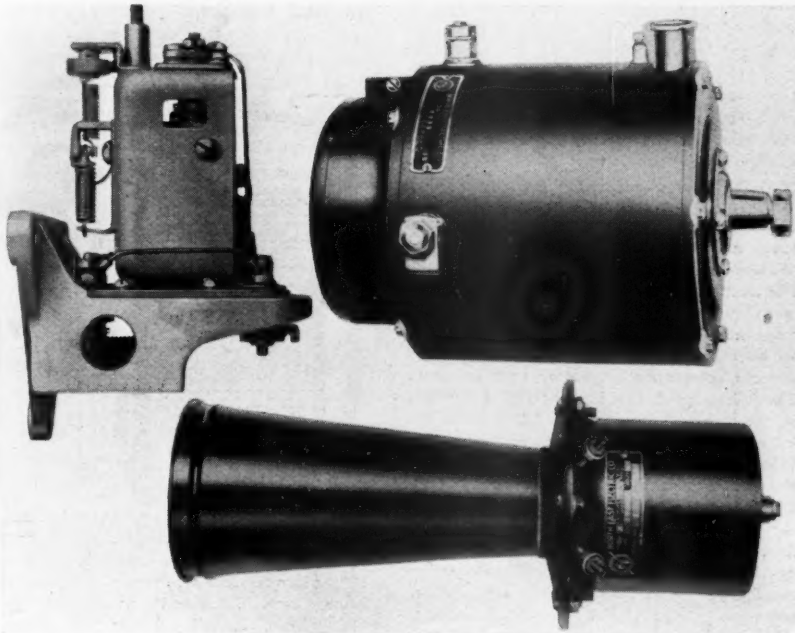
Kenworth Model 1. 3½ Ton
With lumber body; steel cab; 4 speed transmission
Complete Line: 1½, 2½ and 3½ Ton



For Complete Specifications of Chassis, See Specification Tables, Pages 55-68

1924 MOTOR TRUCK SHOW

Parts and Equipment Section



North East Electric Products

North East Electric Co., Rochester, N. Y.

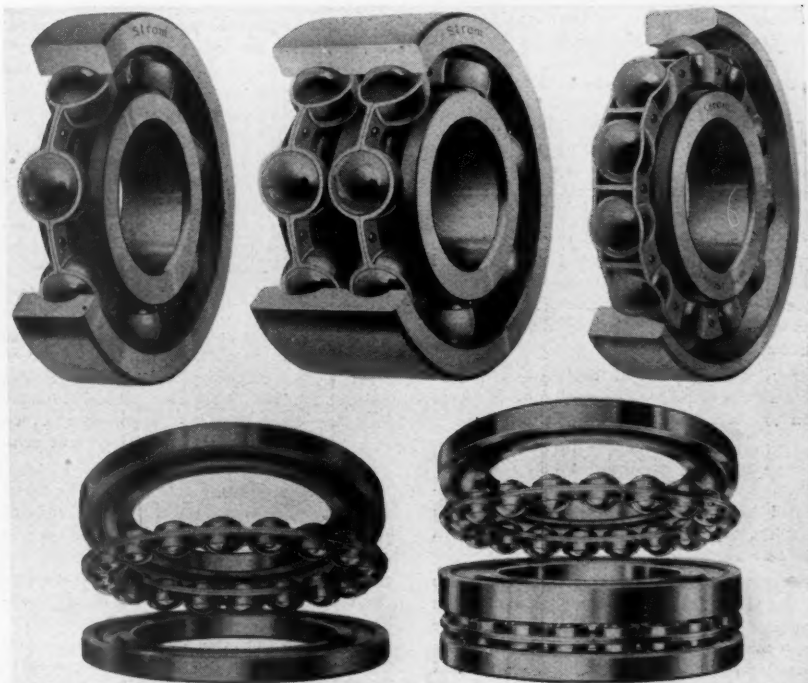
Showing the North East Voltage Regulator with cover removed. This regulator provides positive voltage control regardless of temperature or load variations.

The North East Model L G Generator—cradle mounted. Has third brush regulation. Voltage control is optional. 12 volt type—300 watt capacity. Cut-in at 900 r. p. m. Full output at 1500 r. p. m. North East Electric Horns 6 or 12 volt.

Strom Bearings

U. S. Ball Bearing Mfg. Co., Chicago, Ill.

From left to right: Single-row deep groove Standard type, radial bearing; Double-row, deep groove Standard type, radial bearing; Angular contact bearings, combination radial and thrust; Single-acting thrust bearing, flat seats (grooved races) 1100-F Series; Double-acting thrust bearing, flat seats (grooved races) 2100-F Series.



1924 MOTOR TRUCK SHOW

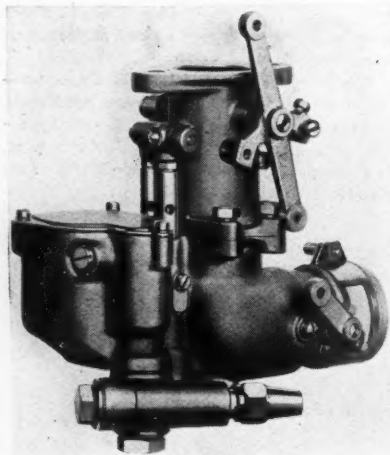
New Zenith Model U F Truck Carburetor

Zenith-Detroit Corp., Detroit, Mich.

The new Zenith has been specially designed to withstand the rigorous conditions of truck and motor bus service. There are fewer moving parts than in the standard Zenith and they have been designed so that wear will be reduced to a minimum.

Throttle shaft is made of steel with a ground finish to fit in long brass bearings. The bearings are protected from dust and dirt by felt washers held under compression.

Throttle and strangler levers are made sturdier. The strangler valve is twice as heavy as in the standard carburetor.



The float mechanism has been entirely redesigned. With the usual float mechanism used in the better grade carburetors, the float and needle valve both take on a decided spinning motion under certain conditions or vibration set up by the engine or by roads over which a vehicle is driven. This results in considerable wear to the needle valve and its seat, also to the needle valve lever weights, and their brackets and axles.

In the new Zenith construction these troubles are entirely overcome as no spinning of these parts is possible. At the same time the float mechanism is simpler in construction and more positive in action.

A new design of filter is incorporated which has a much larger area than usually found on carburetors. The screen can be removed for cleaning without disturbing the gasoline connection.

For easy starting of large engines, particularly by hand, a starting well, in addition to the usual idling well, is provided.

These two wells are set side by side, the idling well being connected to the fuel bowl at its bottom. The starting well is connected to the idling well by a drilled hole near the top, just below the level of fuel in the carburetor bowl.

Economical operation is obtained by means of the usual Zenith compound nozzle system protected by the fixed adjustment. With the improvements noted herein, maintenance costs will be reduced and reliability and uninterrupted service enhanced.

The Ricardo Combustion Chamber

Waukesha Motor Co., Waukesha, Wis.

In studying the problem the Waukesha Motor Co. was convinced that the limitation of modern engines was in the combustion chamber, where the real job of converting the energy of the fuel into useful power was accomplished.

The Waukesha Motor Co. reviewed the art and reconsidered this well known fact, that in 1900 Sir Dugald Clerk discovered that when the explosive mixture was in the state of agitation or turbulence the charge was burned with great promptness with resulting higher power and efficiency.

There are other features of combustion chambers which limit the useful return from fuels and performance. Engineers of the Waukesha Motor Co. began an investigation as to the causes of pre-ignition and ping in an engine burning the lower priced gasolines and kerosene. During this research, which extended over a period of years, they dug up the detonation theory now accepted. They discovered the influence of hot spots in the combustion chamber. They noted the influence of spark plug location and the value of multiple spark plugs. They found the influence of firing into a pocket. They first noted the facts which led to the bouncing pin and methods of measuring detonation. They noted the effects of long flame travel. They noted the effect of combustion chamber in producing greater acceleration, and they noted the improved carburetion effect of turbulence due to the cylinder walls and mixture temperatures being the dominating factors in combustion. They finally came to the conclusion that the charge must be as compact as possible and the run of the flame to the farthest end of the effective chamber as short as possible.

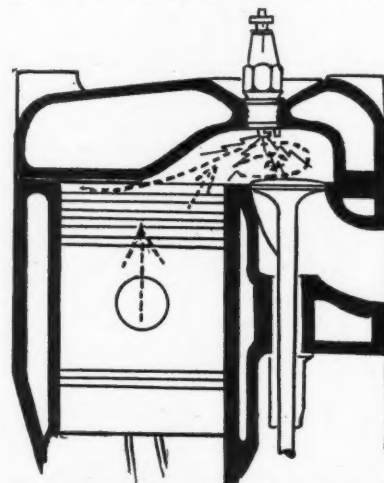
Up to recent years so far as international design for the purpose was concerned, turbulence was neglected by all, yet as a matter of fact, it is the thing that makes modern engines at all possible. Turbulence and correct combustion chamber design is the first factor of importance in all engine designs.

During the war Harry Ricardo, of Shoreham, England, invented the Ricardo Combustion Chamber for Ell Head Engines. This construction is shown in an accompanying illustration, and conforms with all the known facts above mentioned, concerning combustion chambers and among other things harnesses and capitalizes turbulence in Ell Head Engines. There has been cordial and thorough co-operation for years between Ricardo & Company and the Waukesha Motor Co., who are justly proud to have been connected with the development of this very important improvement in internal combustion engines.

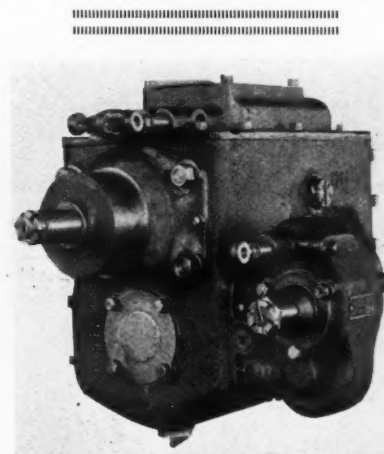
Before the invention of the Ricardo Head the turbulence was produced by the rush of gas by the intake valve. In common designs turbulence died out by the time the spark jumped. In the Ricardo Combustion Chamber (note the compact form of chamber and the favorable location of spark plug) turbulence is produced by the piston forcing the gas up into the chamber, causing a rapid swirling of the main body of the charge, thus

disturbing the flame rapidly throughout the mixture.

In an engine running at 2000 r.p.m. the charge takes usually four thousandths of one second to get the maximum pressure. On an engine with the Ricardo Head it takes only two thousandths of a second to build up to a still higher pressure. It takes a



wide variation of spark advances to handle an ordinary engine efficiently. In a recently equipped Ricardo Head engine it takes only 14° advance for all speeds up to 4,000 r.p.m. This high speed burning made possible by the Ricardo Combustion Chamber makes possible 15 per cent improvement in economy and power at full load, depending on other limiting factors. There is a possible improvement in quarter load economy of 50 per cent. Applied to motor car and truck performance and in connection with proper gear ratios it may result in 100 per cent increase in miles per gallon of fuel. It has been proven in innumerable tests that at all compression ratios loads or speeds the highest economy is only possible by having the proper degree of turbulence, compact form of chamber and favorable location of the spark, regardless of the kind of fuel.



Fuller Transmission

Fuller & Sons Mfg. Co., Kalamazoo, Mich.

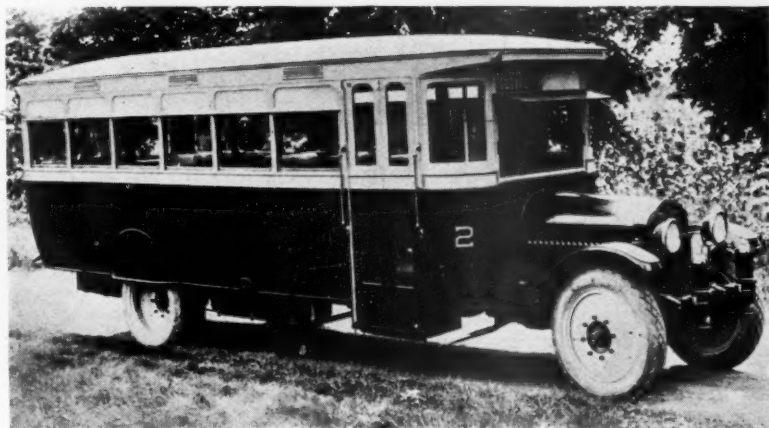
Model H Transmission, amidship, with power take-off

1924 MOTOR TRUCK SHOW

Brown Bus Body

The Brown Body Corporation
Cleveland, Ohio

This bus is made in two sizes, one for 25 passengers, the other for 29 passengers. Some of the special features, as announced by the manufacturer, are: reduction in weight without sacrificing strength or durability; roof construction which permits windows to be raised; rattle-proof, weather-proof aluminum windows; an easy operating door control; heavy moulding around the top of body which acts as a skuff rail and protects body and roof from damage; removable panels and moulding fastened in place by screws.



Hoover Bus Body

Hoover Body Company, York, Pa.

The Type SC-897 bus body is built to accommodate 25 passengers. Panels are of Plymetal. Framework is of selected white ash and oak reinforced by hand forged irons. The roof is of sheet aluminum riveted to a combination of wood and metal carlines. The interior equipment includes hardwood floor with slatted center aisle, rattan covered seats, hand rails and lighting equipment in roof, buzzer and improved type heating equipment, noiseless sash and street car type curtains at each side of window. Regular seating arrangements includes eight 2-passenger transverse seats, two 2-passenger longitudinal seats over wheelhouses and one full width 5-passenger seat in rear.

National Armored Car Body

The National Steel Products Co.
Kansas City, Mo.

These bullet proof cars are designed for use by banks and industrial institutions built in two models, A-2 and A-3. Side panels, front and rear ends, are made of $\frac{7}{8}$ in. special manganese steel plates. Between driver's seat and main compartment there is a $\frac{7}{8}$ in. steel plate partition, with perforations permitting communication and ventilation. All glass in windshield, doors and windows is bullet-proof, fitted on wood cushion strips in steel frames. Turret type loop holes are provided on each side of driver's seat and in front under windshield; they are closed by steel plates. An auxiliary hand brake lever is mounted in the rear compartment, on the floor so that the guards may apply emergency brake in case of danger. A switch, connected to the ignition system, is provided in the rear compartment, so guards may stop engine. All steps are located under doors and so arranged as to raise and lower automatically with closing and opening of the doors. The fenders, over the rear wheels are so shaped that it is impossible to get a foothold on them or anywhere else on the body. Doors are equipped with Yale locks and heavy steel bolts.



1924 MOTOR TRUCK SHOW

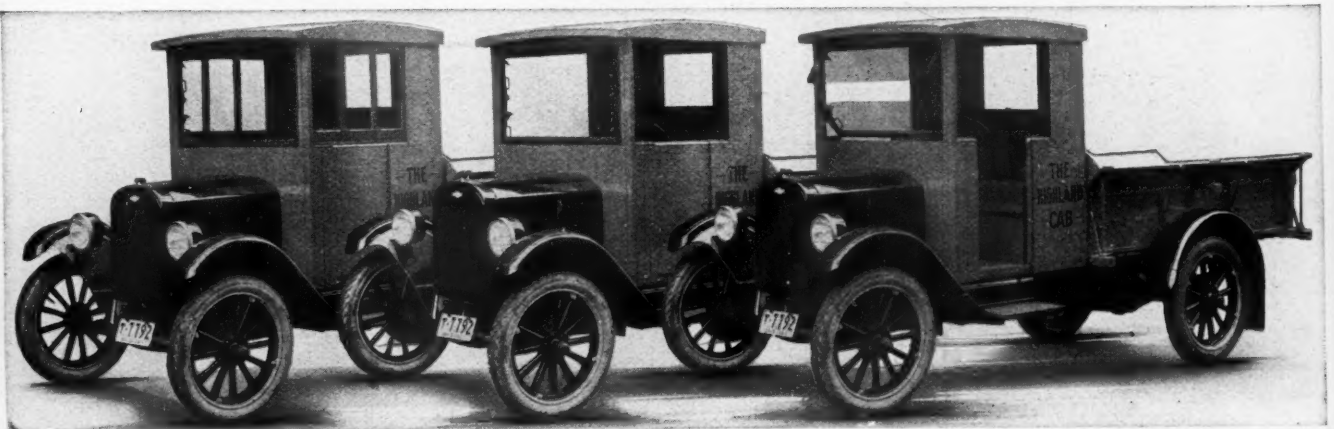
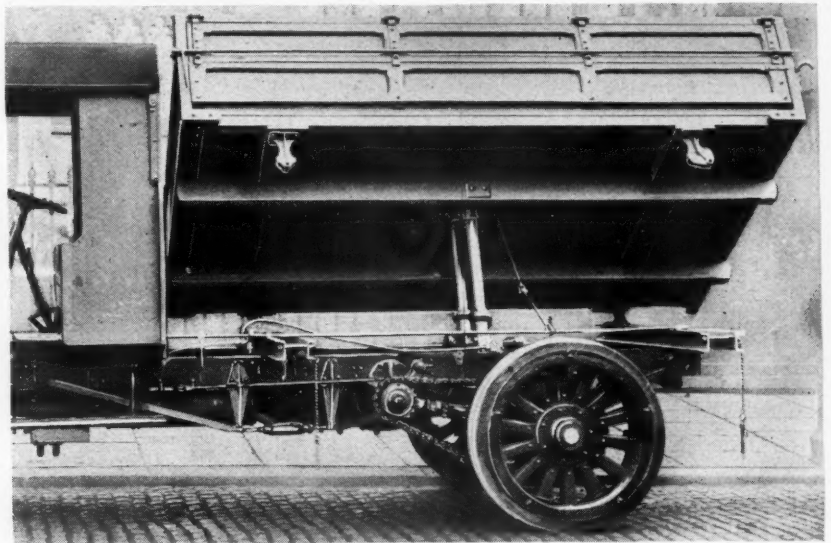


McGarry Roll-off Lumber Body
The John A. McGarry Co., Chicago, Ill.

This lumber loader and unloader is simple in construction and can be installed on a truck, trailer or wagon. The usual number of rolls on the device is four. They are connected with pintle chains tested to 5000 lb. breaking strain and operate in unison by turning one safety crank, enabling one man to handle 6 to 7 tons with ease. The platform is made of 1/4-in. kiln dried yellow pine. The McGarry lumber loading device is a time saver as well as an expense reducer.

Fitz Gibbon & Crisp Dump Body
Fitz Gibbon & Crisp, Inc., Trenton, N. J.

The illustration to the right shows the three-way hydraulic dump body which can be applied to practically any truck chassis and which can be operated either as a rear-end dump or for left-side or right-side dumping. This type dumping device presents a new principle in dump body construction. This company also manufactures a hydraulic rear end dump body suitable for the Ford one-ton truck chassis. It is controlled entirely from the driver's seat.



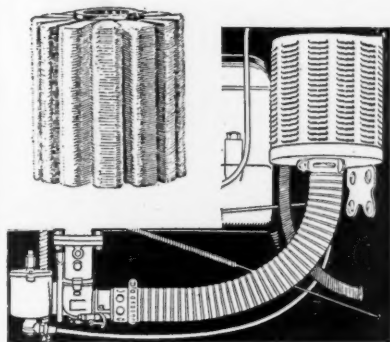
The Highland Cab in Various Positions
The Highland Body Mfg. Co., Cincinnati, Ohio

Showing the Highland Cab mounted on a light chassis with the cab wide open, partly closed and completely closed. The doors are arm high and roll into pockets beside the driver's seat, where they automatically lock. The windows are independent of the doors and slide and fold as they open and when not required are locked into the rear corner.

The rear window drops into a pocket back of the lazy back, which is on springs. The cushions are the deep spring type in pairs. The windshield is of the clear vision, full ventilating type, both sash swinging on heavy hinges.

This cab is termed a universal unit because the driver has easy access to the seat from either side and can convert it from a wide open unit to one partly or completely closed without leaving this seat or stopping the truck.

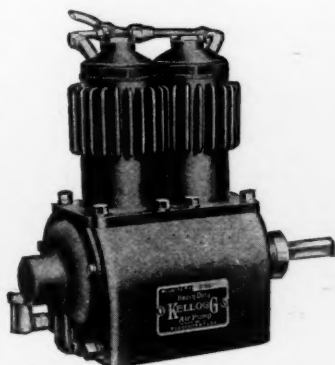
1924 MOTOR TRUCK SHOW



Protectometer

Staynew Filter Corp., Rochester, N. Y.

This device, which the manufacturer says is more than an air cleaner, is designed to keep out all dirt, control air temperature and muffle carburetor noises. Due to its construction, the velocity of the air entering the filter shell of the Protectometer is greatly reduced so that the larger particles of solid matter in the air are precipitated before entering the shell. The air passes through the filtering material at a speed of less than 1 ft. per sec., the solid and abrasive matter being completely eliminated. The air does not strike directly on the filtering material but enters the shell at the right angles to it and at so low a velocity that the dust rests lightly on the felt so that the accumulated dust which is porous permits the air to pass through. The dust is shaken off the filter by the vibration of the machine and is discharged through the opening at the bottom of the shell. The accompanying illustration shows the Protectometer connected with the carburetor, also a view of the filter (the insert illustration) before installation.



Kellogg Power Driven Tire Pump

Kellogg Manufacturing Co., Rochester, N. Y.

A complete line of pumps for pneumatic tired trucks is manufactured by this company. Illustration shows the Model 42, a two-cylinder pump for use on trucks having tires of over 8 in. cross-section diameter. Bore is $2\frac{3}{4}$ in. and stroke 2 in. Equipment includes pump, 15 in. air hose with 200-lb. gage, all brackets, gears and installation fittings necessary.

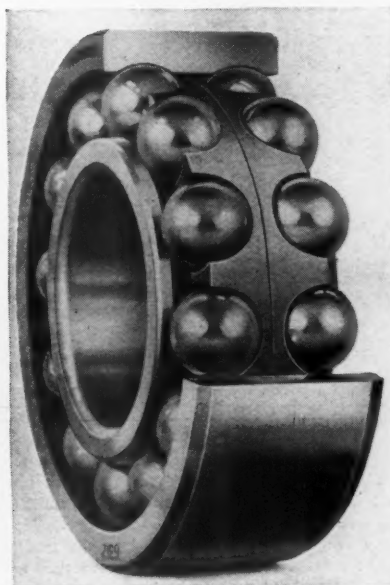


Whitcomb Aluminum Wheels

Whitcomb Wheel Company, Kenosha, Wis.

Illustration shows the new Whitcomb 20-in. size wheel which will carry any of the 20-in. rim tires. Whitcomb Wheels are built to suit the requirements for any standard size of tire for any make of motor truck or bus.

All Whitcomb Wheels are guaranteed for the life of the vehicle under ordinary conditions.



Fafnir Double Row Radial Ball Bearing

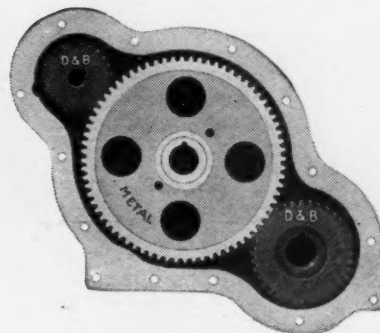
The Fafnir Bearing Co., New Britain, Conn. The Fafnir line includes all standard types and sizes. All Fafnir Ball Bearings are made from thoroughly heat treated chrome alloy steel.



United Air Cleaner

The United Manufacturing & Distributing Company, Chicago, Ill.

The United Air Cleaner is a device designed to automatically remove road dust, sand and foreign matter from the air breathed into the engine through the carburetor. This cleaner will treat 25 per cent more air than the engine needs. The air is brought in at the top of the cleaner, where it is passed over the rapidly revolving rotor and is all subjected uniformly to centrifugal force of great intensity. By this centrifugal action it forces all harmful particles into the outer stratum (the 25 per cent) and ejects them back into the outer air. The clean air which is close to the rotor, or the inside of the whirl, is taken up under the edge of the rotor, through the turbine (which propels the rotor) and down to the carburetor. It is claimed by the manufacturer that the cleaner will not cut down the horsepower of the engine. It is extremely light; the 4-in. size for 1-in. carburetors weighs 18 oz. The United Air Cleaner is readily adapted to any make of engine. The prices range from \$7 to \$15.

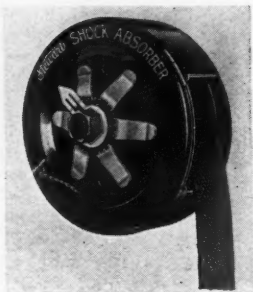


D & B Silent Timing Gears

Dalton & Balch, Inc., Chicago, Ill.

Illustration shows two D & B gears made of a patented composition known as Fabrigear. This composition has for its base a series of layers of thoroughly shrunk woven fabric similar to the best grades of cotton duck but of much finer weave and greater strength. This fabric is impregnated with "Condensite," a synthetic gum.

1924 MOTOR TRUCK SHOW



Stewart Shock Absorber

The Stewart-Warner Speedometer Corp.
Chicago, Ill.

A shock absorber that claims simplicity of construction with a minimum of moving parts is being introduced by the Stewart-Warner Speedometer Corp. There are but two moving parts; the drum around which the webbing is wound and the coiled steel, rebound spring. This spring is mounted inside a steel drum, through the center of which passes the hardened, cold-rolled steel stud. Bearings are provided on both sides of this drum to guarantee a free and even action of this part around the center stud. Ready adjustment is claimed as another feature of this device. To tighten or loosen the absorber it is only necessary to turn a small adjustment nut located on the side of the device with a wrench. The drum, coiled spring and friction disks of the Stewart Shock Absorber are all encased in a housing made of cold rolled sheet steel, finished in a lasting protective coating of rust-proof enamel.



Bethlehem Rolled Steel Truck Wheel

Bethlehem Steel Co., Bethlehem, Pa.

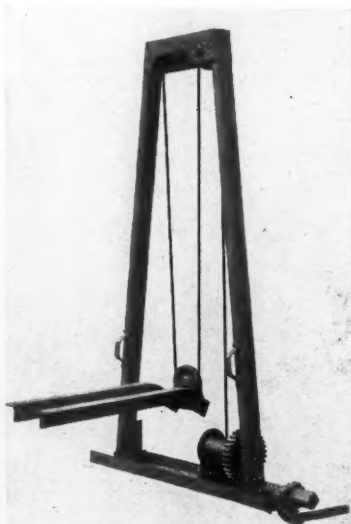
The illustration shows a rear wheel for a 3½-ton truck. The Bethlehem Wheel is made from a specially rolled I-beam. Cold punching and forming of the beam in a series of presses, and operations on special single-purpose machines constitute the short series of continuous processes necessary to form the wheel.



The K. P. Governor

K. P. Products Co., New York City

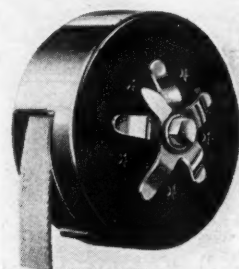
Operates on vacuum and governs without loss of engine power. Compact, simple, sturdy—can be locked against tampering. Made for all trucks.



Rock Type H Hoist

Rock Mfg. Co., Waterloo, N. Y.

This hoist can be applied to any truck up to 3½ tons capacity and to frames from 30 in. to 39 in. in width, without change. No holes are required to be drilled in the truck frame for fastening the hoist. A ratchet is provided to hold the load in any position and a brake permits the body to be lowered quickly and with little effort. The total space required for the hoist between the body and the cab is 9 in. and the total height above frame is 72 in. The weight of the hoist is about 215 lb., and that of the body hinge is 45 lb. The dumping angle obtained is from 35 degrees, depending upon the length of the body.



Bosch Shock Absorber

American Bosch Magneto Corporation
Springfield, Mass.

Supplementing its already well-known line of starting, lighting and ignition equipment, the American Bosch Magneto Corp., of Springfield, Mass., announces the introduction of a shock absorber for trucks and passenger cars. The manufacturer claims that this device offers a gradually increasing resistance—the same kind of resistance to car spring expansion as the car spring itself offers when compressed. By the use of a balanced combination of friction and coiled spring action, a wide range of operation is effected, the device functioning immediately when the expansion starts and controlling it up until the spring energy is dissipated.

The main parts of the Bosch Shock Absorber are a conical-shaped friction drum of the oilless bearing type, a large coiled spring of the clock type, and a belt for connecting the mechanism of the shock absorber to the car axle. The cone-shaped hard wood, oilless bearing drum in the shock absorber, having a liberal bearing surface, insures it exceptionally long life with a minimum amount of service. Metal to metal bearings are entirely dispensed with.



Brunner Air Compressor

Brunner Manufacturing Co., Utica, N. Y.

Model 967 assembled unit is shown in the accompanying illustration. This heavy duty outfit will easily handle up to six air drive pumps, up to 20 air lines, or supply air to a busy shop, says the maker. Suitable for continuous operation. Other uses in addition to tire inflation are: air spraying, paint spraying, air cleaning and the operation of many pneumatic tools. Net weight is 830 lb.; shipping weight 1050 lb.

1924 MOTOR TRUCK SHOW



Atlas Model LC12 Bus Axle

Atlas Axle Company, Wilmington, Del.

This particular model is standard equipment on the Philadelphia Motor Coach, the 65 passenger double deck bus operated by the P. R. T. It affords a minimum floor height with little or no kick-up in the frame and without underslinging the springs. Other features include: one piece cast malleable iron housing of box girder section enclosing and protecting all driving components; dual internal expanding brakes, toggle actuated and adjustable for wear without alteration of linkage; positively leak proof oil lubrication throughout; spiral bevel differential drive gears in conjunction with a special Brown-Lipe-Chapin differential; all gears splined to their respective carriers, thus relieving the usual attachment bolts of all torque and shearing stresses; and ease of

wheel removal, which is accomplished by inserting a 1 in. bolt in the tapped hole in the hub cap resulting in a self-contained wheel puller.

The differential can be reached from the rear by removal of cover plate and the entire assembly can be withdrawn from the front as a unit. In demounting the wheel, the internal gear lubrication is not lost nor is the bearing adjustment disturbed. Specifications: Max. permissible load on spring pads, 12,000 lbs.; tread 75 in.; overall width, 90 in.; standard gear ratio, 7.1 to 1; optional gear ratio, 6.1 to 1; spring centers, 3½-in. springs, 53 in. max.; spring pad height, 12¼ in.; ground clearance at differential, 5¾ in.; wheels, cast metal for 34 in. x 6 in. dual solid tires; brakes, dual internal expanding 3 in. x 24 in.; weight, complete with wheels, 1675 lbs.



Champion Spark Plugs

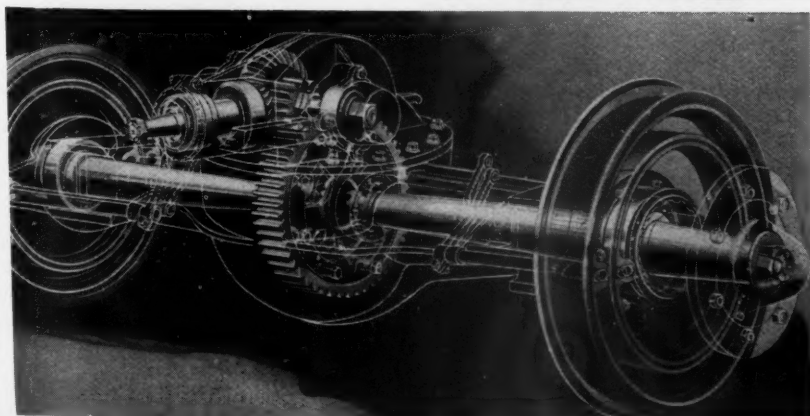
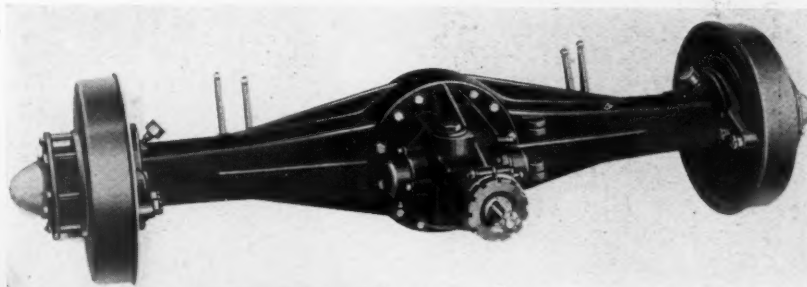
Champion Spark Plug Co., Toledo, Ohio

One of the new model spark plugs introduced by the Champion Spark Plug Co. No. 4 has a ¾-in. body length with the exclusive Champion sillimanite double-ribbed core, particularly serviceable in heavy duty work. The X Long model, (not shown) is ½ in. long and has also the exclusive Champion sillimanite double-ribbed core.

WISCONSIN TRUCK AXLES, Wisconsin Parts Company, Oshkosh, Wis.

Wisconsin Special Bus Type Axle

This design provides an unusual amount of top clearance for low body suspension without sacrificing ground clearance. Four sizes are in production for busses seating 15, 20, 25 and 30 passengers. Special high gear ratios are available in each size.



Wisconsin Double Reduction Truck Axle

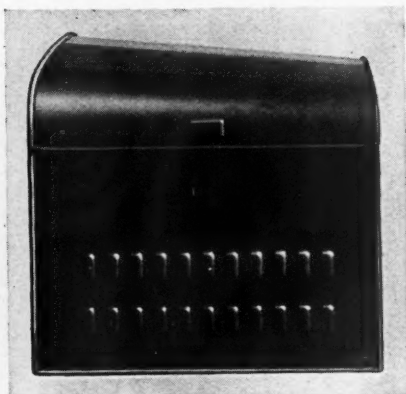
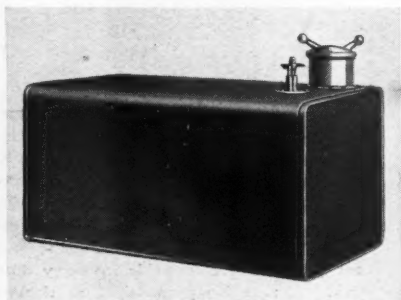
A bevel and spur gear type using spiral bevel gears in the first reduction. All gears are located in a unit assembly at the axle center and operate in a continuous oil bath. A complete line is available for trucks of all capacities ranging from 1½ to 5 tons inclusive.

1924 MOTOR TRUCK SHOW



Triangle Brand Axle Shafts and Piston Pins
W. D. Foreman, Chicago, Ill.

Manufactures a complete line of axle shafts and piston pins



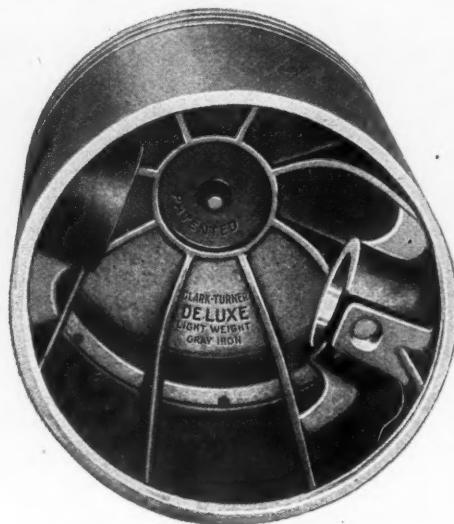
B. & B. Pressed Steel Products

A. B. & B. Sheet Metal Works
Milwaukee, Wis.

The accompanying illustrations represent typical products of this company.

They fabricate hoods, tanks, fenders, running-boards, running-board shields, mud pans, and in fact all sheet metal parts for automobiles, trucks, tractors, and busses, working entirely from customers' specifications embodying their own designs as far as possible to conform with standard tools and dies or if this is impossible, making special dies for the purpose.

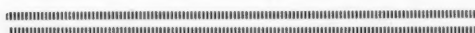
The tank pictured is one fabricated for the Yellow Coach Mfg. Co. of Chicago, and the hood for the Fifth Avenue Coach Co. of New York.



DeLuxe Light Weight Piston

Clark-Turner Piston Co., Los Angeles, Cal.

Showing the interior ribbed construction of the DeLuxe light weight grey iron pistons



Republic Stag Truck Tires

The Republic Rubber Co., Youngstown, Ohio

The Republic Truck Tire Line includes all three types of truck tires—solid, cavity-center-solid and pneumatic. They are sized to fit every type of wheel from light commercial vehicles to the heaviest dump trucks, etc.

The distinctive feature of the entire line is the Staggard Stud Tread for which is claimed increased traction and anti-skid protection.

The cavity-center tire is constructed with a full contact steel base giving greater additional stability on the rim.

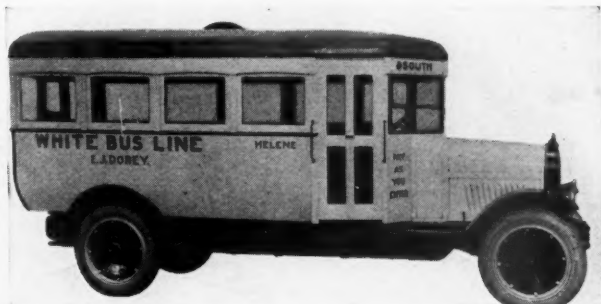
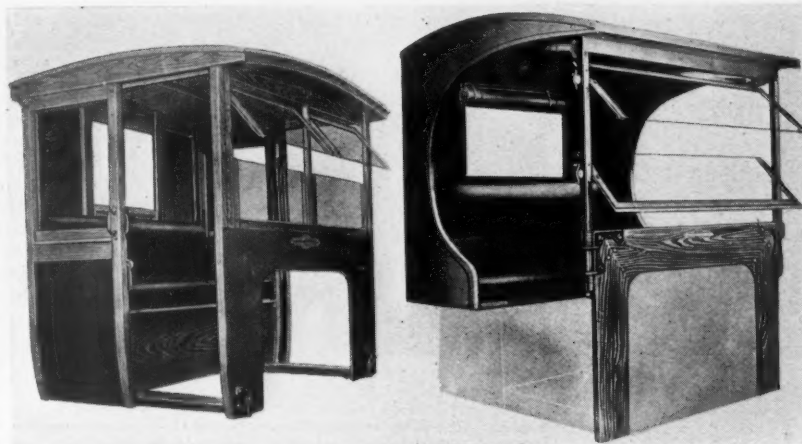
1924 MOTOR TRUCK SHOW

Metro All Weather and All Steel Open Cabs

The Metropolitan Body Co., Inc.
Bridgeport, Conn.

The All-Weather Cab, made in three sizes, has inside widths of 50 in., 56 in., and 62 in. The minimum head-room from seat to top of cab is 43 in. while the minimum standing head-room is 62 in. Cushion and lazyback are of best construction with good quality weather-proof imitation leather on hardwood, lap-jointed frames. The windshield is in four sections. Doors are easy sliding type equipped with anti-rattlers. Door and side panels are of 22 gage blue annealed steel, re-enforced edges and lapped; dash and back of 18 gage blue annealed steel. The roof, sash and windshield frames are finished in high grade varnish, other parts in gray primer.

The All-Steel Open Cab is made in two sizes and has a cushioned windshield. The seat, frame, roof, back and sides are made of blue annealed steel-weather proof imitation leather is used on the cushions and lazy back. Seat, frame, roof, back and sides are individual units, each capable of repair or replacement.



Whitfield Resilient Bus Bodies

W. H. Whitfield & Son, Penn Yan, N. Y.

The illustration depicts a 15-passenger Whitfield bus mounted on a Larrabee Speed Six, made by the Larrabee-Deyo Motor Truck Co., Binghamton, N. Y. A Whitfield 22-passenger bus body on a Larrabee 1½-ton chassis is also made by this company.

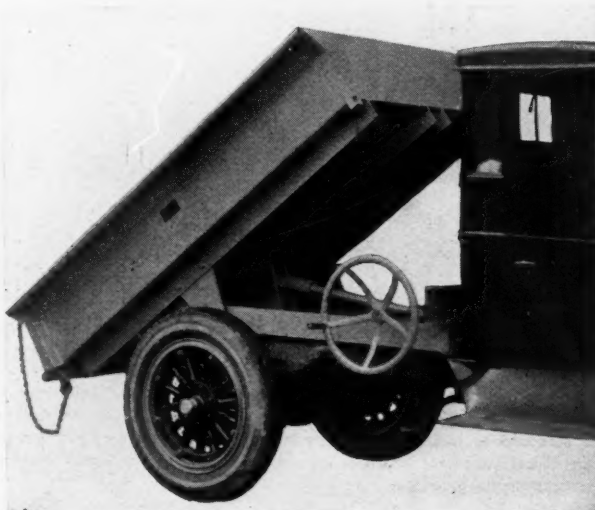
The bodies are of distinctive design, stream line, and original without being extreme. A V-shaped front giving greater vision is used with a resultant reduction in wind resistance. The panels and deck are finished in DuPont Fabrikoid giving a rich two-tone finish in handsome grain, easily cleaned. The Whitfield one-piece entrance door eliminates sagging and binding and protects the step. Soft edge cushions with double-coil springs, well padded and tilted at a comfortable angle, are employed.

Saftee Dump Body on Graham Bros. Chassis

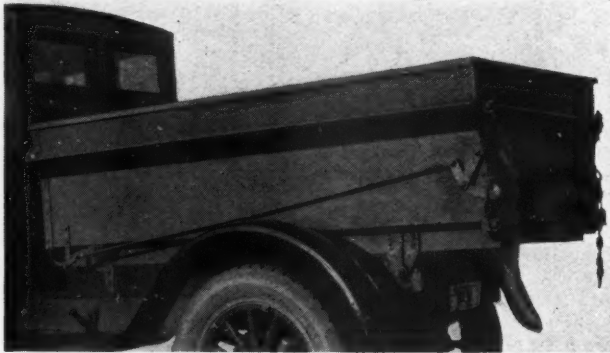
Ditwiler Mfg. Co., Galion, Ohio

Model B Body, capacity 1¾ yds. Weight 1050 lb. Length 96 in., width 52 in., depth 18 in. with 7 ins. additional flare on sides. With No. 9 6-in. side boards (three pieces, weight 110 lb.) capacity increased 21 cu. ft. to 2½ yd.

Model A Saftee Dump also made for this chassis with capacity 1 1/3 yds. or 2 yds. with No. 6 side boards. Frame cut off to spring supports. Price model B body \$240, price No. 9 side boards \$20, price model A body \$175. Price No. 6 side boards \$20. All prices f.o.b. Galion. Complete line includes steel slip-on bodies, gravity dumps and hand dumps in several sizes and styles.



1924 MOTOR TRUCK SHOW



Auglaize 45 Cu. Ft. Steel Body

The Auglaize Hoist and Body Co., New Bremen, Ohio

Showing the standard Auglaize 45 cu. ft., body, 8 ft. long and 44 in. wide with 6 in. side board increasing the water level capacity to 62 cu. ft., equipped with a Wood Hydraulic Hoist. The body is built of No. 10 gage sheet steel, corners reinforced with steel castings. The tail gate is double acting, the locking device being operated from the cab end of the body.

This body incorporates standard Auglaize construction throughout, with the exception of the sub-frame which is built especially for the Reo Speedwagon with the Wood hydraulic hoist. These bodies with the same construction can be furnished with a hand hoist.

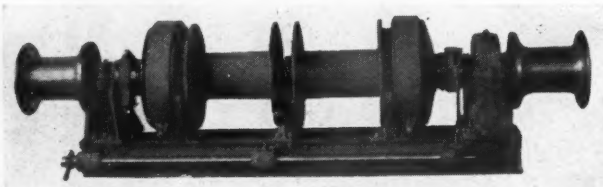
National Hand Hoist

The National Hoist and Body Co., St. Paul, Minn.

A new National Model for use on light duty trucks up to 1½ ton capacity. The cut shows the hoist at full elevation. This hoist will go under any body (wood or steel) and will not interfere with crossmembers or brake rods. Being an underbody hoist, it permits proper load distribution, and also greater dumping angle on short wheelbase trucks. The entire gear mechanism is lubricated by one Alemite fitting, and all bearings are also equipped for proper lubrication.

The body can be held in any position, and a very efficient and unique eccentric brake arrangement provides for control of body in lowering, which is by gravity. The hoist is mounted directly on the frame and is bolted through side of channel.

Each arm is raised by the equivalent of 2¾ in. plow steel cables which in reality consist of a single cable doubled, going from the end of the arm to the drum and back to the end of the arm where the ends are securely fastened by three cable clips. The hoist lists at \$125 f.o.b. St. Paul.



Model TBB Double Drum Friction Clutch Winch

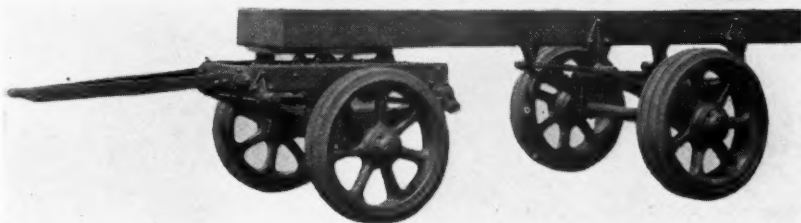
The Silent Hoist Company, Brooklyn, N. Y.

Some of the features in design of this winch include the use of steel castings in place of the usual iron castings, making it adaptable for motor truck mounting exclusively; great strength; lightness; compactness and high mechanical efficiency. The drive from the power take-off of the truck to the winch is by means of a heavy

roller chain. There are only two gears on the entire machine; the worm gear drive consisting of a phosphor-bronze worm wheel, meshing a nickel-steel hardened, ground and polished worm mounted on radio-thrust ball bearings—all running in oil in an enclosed gear case. The manufacturer claims that this worm gear drive makes it the only really safe hoist, for it is self-locking and non-reversible and so prevents backward turning (with the clutches engaged) should the motor stop.

The drums are accurately bored and machined and fitted with self-lubricating phosphor-bronze and graphite bushings, and have split, bolted ratchets with pawls. The clutches and brakes are lined with Raybestos and are easily adjustable for wear. The two polished winch heads, furnished as standard equipment, are used with manila rope for auxiliary pulling and hoisting work. The entire machine is mounted on a fabricated structural steel base which is securely clamped to the chassis channels of the truck. A bank of four control levers are centralized at one point for convenient operation.

1924 MOTOR TRUCK SHOW

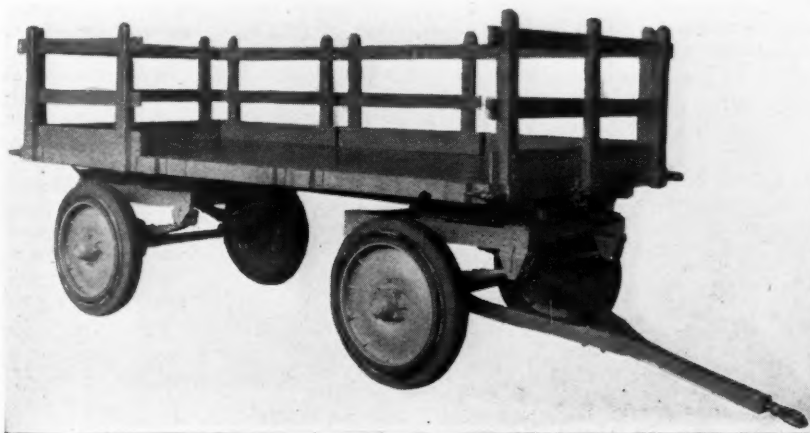


Automotive 10-Ton Four-Wheel Trailer

Automotive Trailer Corp., Springfield, Ill.

The Automotive 4-Wheel standard trailer is made in seven sizes from 2 to 20 tons capacity. The main frame and sub-frame are made of pressed steel, hot riveted, with reinforced cross member.

By means of a roller bearing turntable and king pin construction the front truck can be cut under the main frame to a 90 degree angle. The axle bearings are the only bearings which require lubrication, as all others are equipped with oilless bushings. If desired, frame may be dropped 8 inches and steering device attached to front trucks for use in backing. This change will allow front truck to turn to maximum angle of 40 degrees. This company also builds a line of 4-wheel reversible trailers, two-wheel trailers and pole trailers.



W & K Model C Trailer

Whitehead & Kales Co., Detroit, Mich.

This model is designed to carry a 6000 lb. live load. The wheelbase is 96 in. and tread 56 in. Turning radius 16 ft., Timkin bearing, with Alemite lubrication.

Wobbling or snaking is eliminated through the axle and drawbar construction. A heavy straight axle is used in both trucks and a stiff and rigid drawbar is attached directly to the axle, thereby eliminating any possible chance of whipping.

The frame is made of high quality steel reinforced by oak. With this oak-reinforcing construction practically every type of body may be easily and quickly installed. This trailer can be furnished with automatic brakes. These brakes, positive in their operation, are built into the drawbar and no special connections whatever are necessary in hooking up to truck or tractor or when detaching. A hand lever set is provided so that the brakes can be applied should it be desired to let the trailer stand by itself on a grade or any place where the brake is necessary. The brakes are of the internal expanding type with closed drums to keep out dirt and mud.



Lapeer Semi-Trailer

Lapeer Trailer Corporation, Lapeer, Mich.

This shows one of the many models which this company builds. A special turntable wheel is supplied to be mounted on the truck or tractor. The construction of this trailer eliminates the use of separate jacks for holding the trailer in position while loading. Coupling is automatic.

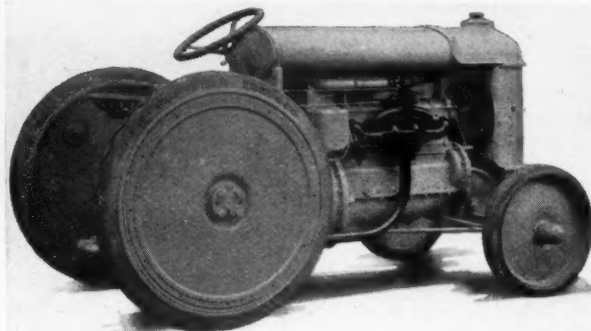
1924 MOTOR TRUCK SHOW

W & K Wheel Equipment for Fordson Tractor

Whitehead & Kales Co., Detroit, Mich.

This W & K Solid Rubber Tired Wheel Equipment for the Fordson tractor includes fronts equipped with 24 x 3½ standard S. A. E. tires and rears with 40 x 5 non-skid of Goodyear All-Weather tread or Firestone Cup Cushion manufacture.

The rear wheels are of hollow construction and can be loaded down through three hand hole covers provided by using steel slugs or punchings to an additional weight of 500 lb. each wheel making a total weight of approximately 1100 lb. in each rear wheel. This is for the purpose of reducing freight and handling costs and providing necessary traction when required as traction on hard surfaces is almost entirely dependent upon weight.



Wood Hydraulic Hoists and Bodies

Wood Hydraulic Hoist & Body Co., Detroit, Mich.

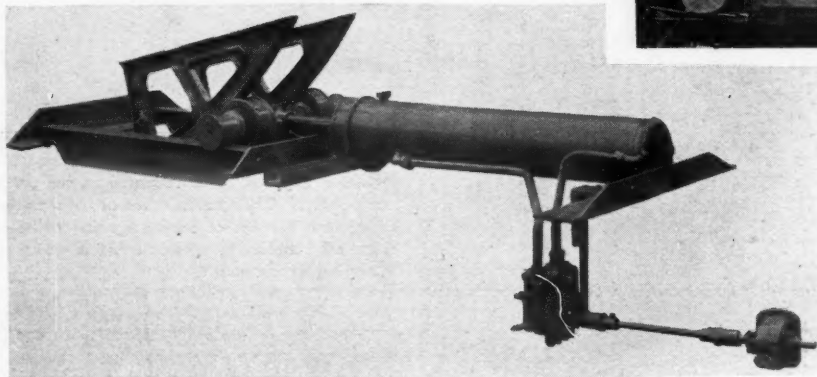
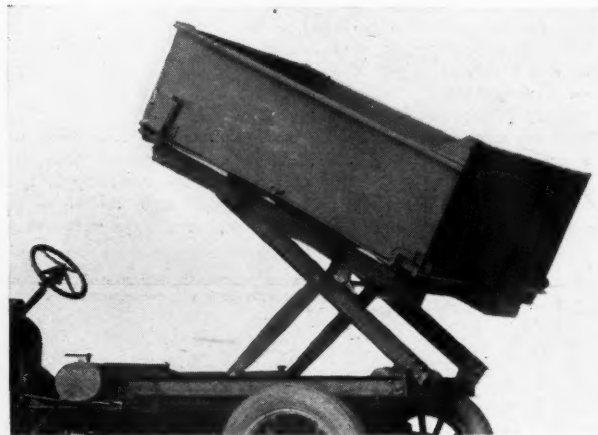
Accompanying illustrations show three products of this company. The Self-Dumper is arranged for mounting on a Ford 1 ton truck. No hole drilling is required and the complete body can be mounted

on the chassis in 20 minutes. This body is operated by gravity.

The Hi-Lift is a new development, which is built for heavy trucks also a Ford model. It is operated by power from the engine. The height to which the body can be elevated permits coal to be chuted across the side-walk into coal holes.

The Underbody Hoist illustration shows the complete units comprising this well-known hoist equipment. Note the power take-off. A feature is the straight line drive which is used with all power take-offs. By varying the length of the high and low pressure pipes, it is possible to locate the pump with relation to the power take-off, so that there is practically a straight line drive, throwing a minimum of work on the universal joints.

Some of the features claimed for these bodies and hoists are that the ease and smoothness of operation of the hoisting mechanism will prevent rapid wear of the truck chassis and that installation of the Wood unit will not interfere with the use of the truck for general hauling.



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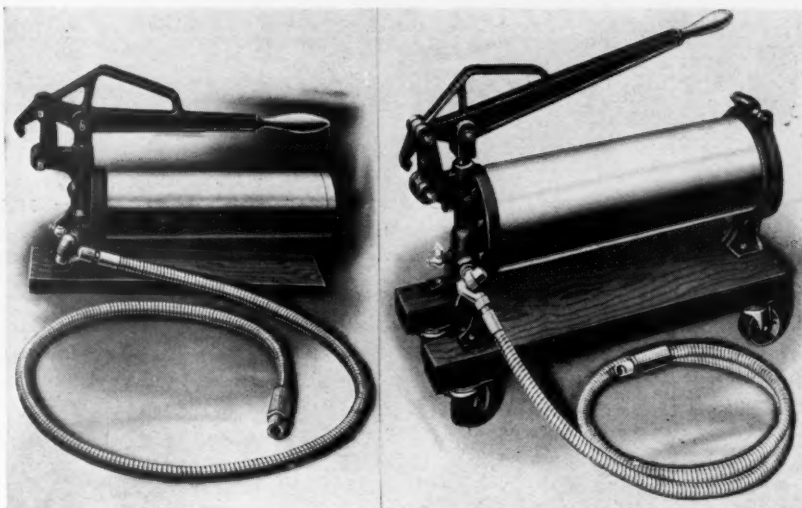
Two New Horizontal Type Alemite Compressors

Bassick Manufacturing Co., Chicago, Ill.

This company announces two new horizontal models of Alemite compressors. The new models, H-5 and H-17, are so-called because of their capacity which is 5 and 17 pounds respectively. The H-5 is especially suitable for use by the private owner of a small fleet of trucks. Its use is highly desirable to greasing stations owing to its extreme portability, light weight and convenience for operating in close quarters.

In the industrial field where portability, high pressure and nimbleness of operation is to be considered, the H-5 will best meet the requirements. Its capacity of five pounds provides a happy medium between the hand compressors and the larger compressors manufactured by this company. It is especially adapted for loading direct from the standard five pound can of Alemite lubricant. It is of sturdy design, weighs only 18 pounds when empty, and is 13 inches in height.

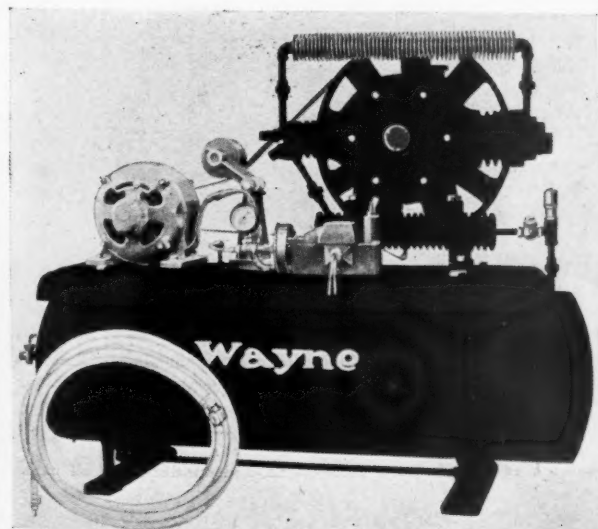
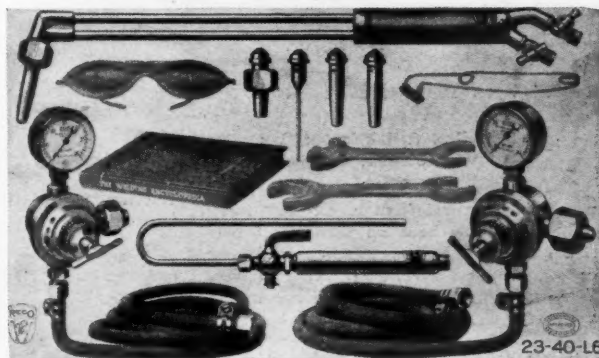
These late models are so designed as to afford the greatest durability and adaptability to their uses. The larger compressor, H-17, is equipped with ball bearing castors. Both models are finished in standard Alemite blue. Based on past experience, selections of the most desirable materials for making the component parts have been made in all cases. The H-5 and H-17 are especially designed for handling Alemite lubricant. These compressors will not function with number five cup grease or other heavy greases.



Bastian-Blessing "Little Six" Welding Outfit

The Bastian-Blessing Company, Chicago, Ill.

The outfit shown at the right, is adapted specially to the automobile repair shop. It will take care of all the welding, cutting, brazing, lead burning, carbon burning and soldering which comes into the average shop. All parts are standard high grade Rego equipment and the outfit is priced very attractively at \$57.50.

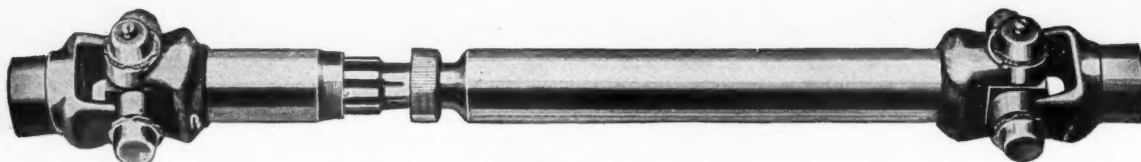


Wayne Pumps and Tanks

Wayne Tank and Pump Co., Fort Wayne, Ind.

Prominent among Wayne products are the Gasoline Pumps, Oil Storage Outfits and Air Compressors, The Wayne Air-Cooled Two-Stage Compressor. They will handle tire inflation (including giant pneumatic truck tires, engine cleaning, upholstery cleaning, small air tools, pneumatic door openers, small spraying outfits. Wayne compressors are built in three models.

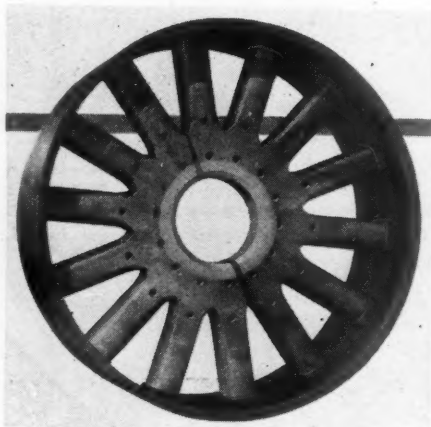
1924 MOTOR TRUCK SHOW



Blood-Brothers Universal Joint

Blood-Brothers Machine Co., Allegan, Mich.

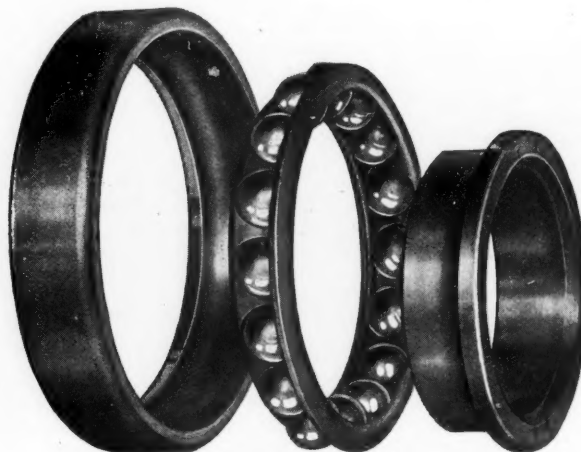
The Blood-Brothers Model B Universal Joint and Propeller Shaft Assembly is made in sizes for all capacities of trucks. It is designed for lubrication with transmission oil and requires very little attention.



Hoopes Metal Felloe Truck Wheel

Hoopes, Bro. & Darlington, Inc.
West Chester, Pa.

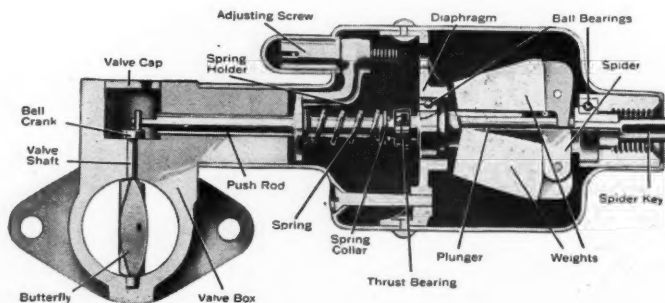
The Hoopes Metal Felloe Truck Wheel which is a combination wood and metal felloe wheel has been on the market over four years and is now standard equipment on several high grade trucks. This company has been manufacturing wheels for over half a century.



Star Ball Bearings

The Bearings Co. of America, Lancaster, Pa.

This company manufactures ball bearings of thrust, angular contact, radial or angular contact thrust type of the blueprint requirements of the customer.



Pierce Centrifugal Governor

The Pierce Governor Co., Anderson, Ind.

Only one type of Pierce Governor is built, but it is so designed that using various combinations of valve boxes and driving equipment it can be used on practically any standard make or model of engine.

The governor housing is a 15-gage steel stamping designed so as to give strength and rigidity, with least possible weight. The valve box is an aluminum casting, while the weight spider, butterfly valve, diaphragm and spring holder are die-cast from a special alloy of unusual strength. The radial ball bearings on which the weight spider rotates are of special design and are manufactured by the Pierce Governor Company, as is also the special thrust bearing between the weight plunger and the push rod that opens and closes the butterfly valve. These special bearings reduce friction to a minimum and make the action of the governor instantly responsive to each change in load on the engine.

The bearings in the various fittings are of bronze. Sturdy bevel steel gears are used in the angle connections, and operate in an oil bath. All parts are designed with a large safety factor, for maximum life and service.

MR. DEALER:

Are You Failing on Gross Profits or Succeeding on Net Profits?

The Dealer Who Doesn't Face This Question Frankly is Headed for the Rocks

HOW many motor truck dealers who were in business January, 1920, are with us today?

If this were simply the usual turnover due to the efficiency or inefficiency of human beings, it would be in line with the general problem of all business, namely the survival of the fittest.

But in the motor truck business, there are other reasons. Major problems are being faced and it is time to talk about them in plain language. Any truck manufacturer who is looking for dealers today, is promptly met with the question, "How much commission do you allow?" If the commission is low, the prospective dealer is cold. If it is higher than he is accustomed to getting, he is at once interested. In other words he gauges his possible profit in terms of the size of the commission he gets.

Yet it isn't what you get that counts, it's what you have left at the end of the year. What's the use of getting 50 per cent commission on a line of trucks that you cannot sell, or on which you have to figure extravagant trade-in allowances on second-hand trucks in order to make sales—so that your net profit on the sale is nothing when you take into consideration your overhead. Isn't it the worst kind of judgment to fall for 50 per cent commission?

It gets you nowhere. It's like pouring water in at the top of a barrel when the bottom leaks. In other words, you're getting 30 per cent, 40 per cent, or 50 per cent commission from the manufacturer's list price and then you turn around and give practically the whole thing away in trade-in allowances on trucks that you cannot sell at what you get for them. If you can sell them at what you allowed for them, you still have the cost of selling the second-hand truck, very often the cost of tinkering with it after the

sale, and the come-back that you know so well from the dissatisfied customer.

In nearly every line of business the best sellers and the most profitable products to handle, pay the smallest margins of profit to dealers. The dealer makes more money on this small margin of profit because he turns his capital over and over again—the public has confidence in that product, there's a market for it, and the dealer comes out ahead at the end of the year.

This point was brought out in a very interesting manner by a representative of an electric truck manufacturer who has taken a cross section of the motor truck dealers of the country, thoroughly canvassing many of our larger cities. "Of all the business men I have talked to in my experience," he said, "I have never met such an unusual point of view as I find in talking with the motor truck dealers of this country. The only thing most of them think of is 'How much commission do we get?' Our commission on electrics ranges from 20 per cent to 25 per cent. 'Oh!' they say, 'We can't do business with you. We get 30 per cent to 40 per cent commission on the * * * line of gas trucks.'

"I come back: 'How much money did you make last year on 30 per cent to 40 per cent commission?'

"'I didn't do so well.'

"'Why not?'

"'Competition is awfully keen.'

"'You sold a lot of trucks, didn't you?'

"'Yes.'

"'What about the 30 per cent to 40 per cent you got on those trucks?'

"'Well, trade-in allowances are pretty stiff. Everybody's doing it on gas trucks.'

"'You mean that you are paying out more on gas trucks than you can sell them for?'

"'Well, everybody else is.'

"'Then at that rate, your net profit doesn't amount to anything, does it?'

"'Well, I'll say this much. I wouldn't advise anybody else to get into the truck business. I'm going to get out of it and go in the passenger car business. I don't know whether that's any better but I know it can't be any worse.'

"I say to him: 'Now, wait a minute before you get out. Let's see where the fault lies. You're looking for gross profits and not for net profits. You'll admit that's wrong, don't you?'

"'Well, I am looking for both, but I'll admit that I'm not getting the net.'

"'And you say that the reason why you're not getting net profits is the trade-in evil—everybody's doing it and you have to do it too?'

"'Yes.'

"'And you think that if you tightened up on the trade-in evil and allowed exactly what you can sell the second-hand trucks for or perhaps a little less, so as to give you a chance to handle them without overhead loss, selling expense, etc., that you'd get considerably less business?'

"'I know I would.'

"'You know that in this very city some dealers offer more and some less on the same used trucks?'

"'Yes, that's right.'

"'Are you in the very high allowance class or in the very low allowance class?'

"'It's this way. When I'm pinched for sales, I'm in the high allowance class; when I have made some sales, I suppose I'm in the low-allowance class. I maneuver around.'

"'Then let me make this suggestion to you. Figure out about how many trucks you think you can sell on sane allowances for second-hand trucks. By a 'sane allowance' I mean not to allow any more than you can sell the truck for, and preferably less than you can sell it for.

so as to take care of the overhead and selling expenses incidental to that second-hand truck. Figure out what volume of business you can probably do on that sane basis.'

"Having figured that out, the next thing to do is to limit your over-head and expenses to that volume of business. If your overhead is too great or your organization is too great, cut it down. In other words, let's start to build this business upon a rock—a rock of com-

you run your business right, and the difference between 16 per cent and 22 per cent on that sale is your margin on the average for quantity discounts and to take care of your bad guesses, because even if you go at it sanely, you'll make some mistakes in trade-ins.'

"Also bear in mind that out of your 16 per cent you must pay rent, light, heat, labor, etc., and also pay yourself a salary. If you don't get it out of the 16 per cent you've got

cent to 25 per cent on electrics?'

"To begin with, in adding a line of electric trucks to your gas truck line you're putting yourself in position to do more business with the same overhead and to render complete transportation service to your customers. It is estimated that approximately half of the delivery done is with horses. The horse can't be beaten on a short-haul, frequent-stop route by gas trucks. Business men who have tried to testify to



How Long Will He Continue to Fall for It?

mon sense. From now on let your motto be 'Every transaction must earn me a net profit or I won't touch it.' Say to yourself: I expect to do a hundred thousand dollar business this year or a million dollar business this year, whatever your conditions are, and that you expect to clear 8 per cent net profit on the average. Now to illustrate, suppose you are selling a job at \$2000, 8 per cent on that means that you have got to have \$160 clear net profit. Assuming that you get 30 per cent from the manufacturer on that job, that leaves you 22 per cent to take care of your overhead and any losses on trade-ins. Now my guess is that your overhead can be cut to about 16 per cent of your gross sales if

to get it out of the 6 per cent that goes to make up the 22 per cent and if you don't get it out of these two, then it comes out of your 8 per cent clear profit that we figured to make. The minute you cut into that, you're in business for nothing. In other words, 8 per cent profit isn't supposed to be your salary. It is supposed to be your return for being in business, for having capital invested, for the worry and the risk of being in business.'

"Well," he usually asks, 'what's all this got to do with electric trucks? You say you allow from 20 per cent to 25 per cent on your electrics. And if I can't make money at 30 per cent to 40 per cent on gas trucks, how can I make it at 20 per

their inability to decrease costs by substituting gas trucks for horses on the short-haul, frequent-stop routes. Gas trucks beat the horse on the long routes but not on the short frequent-stop routes. The fact that 50 per cent of the frequent-stop delivery is horse delivery is a significant proof of this fact.'

"The minute you add electrics for short routes you are in a position to take care of all your customers' requirements. Electric trucks beat the horse in time and money on frequent-stop, short-haul routes. Your gas trucks take care of the routes for which you are selling them now.

"That enables you to do more business with approximately the same overhead because you already

have your place of doing business and it means very little more investment to add a line of electric trucks.'

"Secondly, with electric trucks you do not have the trade-in problem. The electric truck manufacturers and dealers have very wisely steered clear of this. When you go out to sell an electric truck and the buyer wants you to take something else in trade, you can do one of two things with the assurance that no other electric dealer will do any better. In most cases you can decline to take the trade-in except on the basis of selling it for him, or you can take it in trade at a very safe allowance simply because nobody else will do any better.'

"There is another reason why the electric truck is free from the trade-in evil—electric trucks last ten years and upwards. There are electric trucks running around the country that were built before the Spanish-American War and running almost as cheaply as ever. The long life of electric trucks not only cuts down the number that are offered for trade-in, but the buyer is in a differ-

ent frame of mind when he has a truck that has lasted him anywhere from ten to fifteen years or longer. Anything he gets in the way of an allowance strikes him as so much pure velvet because it has lasted him so long. Incidentally, the electric truck user is not so keen about trading in his electric. The operating cost on an electric truck doesn't pile up rapidly. The electric depends for its power on a storage battery with no moving parts, and when the storage battery wears out, the storage battery manufacturer takes care of the trade-in for you. He has a regular schedule of replacement allowances. You get the commission on the new sale and he handles the trade-in.'

"Therefore, the answer to your question is this—the electric truck will not solve the trade-in problem on gas trucks for you, but it will give you a larger volume and it will be a profitable addition to your volume because your net income on electric truck sales will be good. And so we pointed out, it isn't how much you get in commission, it is

how much you have left after you have completed the transaction. That's why I believe the electric will help you.'

"There is a way, however, in which the electric truck will help your gas truck business. Electric trucks are sold on a transportation basis. If your salesmen become familiar with the electric truck sale, it is bound to improve their gas truck salesmanship.'

We have quoted this conversation because it seems to us that gas truck manufacturers and gas truck dealers can learn a lesson from the electric truck field. First of all that it is the net profit that counts, not the gross commission, and secondly, that the present-day handling of trade-ins is as wrong as wrong can be. The electric truck people have the right idea, and a significant indication of this is the fact that electric truck dealers have continued in business on a sales volume that would have been impossible for a gas truck dealer to do business on. Think it over.—[Editor.]

Boulden Leaves Selden Truck Corporation

Hal T. Boulden, who for nearly nine years has been connected with the Selden Truck Corp., Rochester, N. Y. has severed his connections with that company. For the last five years he has been vice-president in charge of sales, service and advertising. Mr. Boulden was one of the founders of the National Association of Motor Truck Sales Managers which later merged with the Motor Truck Manufacturers Association, the outgrowth of which was the present Motor Truck Industries, Inc. He also is given credit for the equitable dealer's perpetual agency contract, which has been well standardized among manufacturers. His future plans have not been announced.

mation, particularly upon such common problems as credits, trade practices, sales methods, packing, etc.

An organization committee has been named, composed of H. L. Kraus, export manager for the Apco, Biflex and Simmons companies, J. F. Kelly, Jr., export manager, Electric Storage Battery Co., Walter Rinck, export manager, Stevens & Co., R. A. Rodriguez, of Rodriguez & Co., and George E. Quisenberry, managing editor of *El Automovil Americano*.

Diamond T Announces Light, Fast Truck

The announcement by the Diamond T Motor Car Co., Chicago, Ill., of a new light, fast model known as the Special Delivery Model 75, carries with it a suggestion of the growing popularity of the light truck field. Heretofore Diamond has been making heavier capacity models exclusively.

According to the company, the new model is the result of a demand by operators for a fast light job with great stamina and durability. Much emphasis has been laid, in designing the new truck, on the motor; accessibility and simplicity being the keynote of construction. Bodies are being furnished for the new job in several standard styles.

The Kant-Score Piston Co., announces a reduction in the prices of its products. The plant of the company is now equipped to treble its output in both finished and semi-finished pistons.

Olds Become Chairman of Reo Board

R. E. Olds, one of the veterans of the automobile industry has retired as president of the Reo Motor Car Co., of Lansing, Mich., to become chairman of the board of directors, a newly created office. He will be succeeded in the office of president by Richard H. Scott. The announcement of the change states that Mr. Scott will continue as general manager and the policies of the company will not be altered in any way. Other officers are H. T. Thomas, vice-president and chief engineer; Bone Bates, secretary-treasurer; Dean M. Parsons, assistant treasurer; R. C. Rueschaw, sales manager; H. C. Teet, factory manager and G. F. Smith, purchasing agent.

Boosters' Clubs Form Export Group

An export group of the Automotive Boosters International, composed of export managers and representatives of the various firms manufacturing automotive equipment, is being formed as the result of a meeting held in New York, December 19. Headquarters will be maintained at New York, with periodical meetings for the discussion of export problems, but membership will be confined to representatives of equipment houses selling through the jobbing trade.

Plans were outlined at the meeting by which the organization will become a clearing house for export trade infor-

Ford Power Exhibit Drawing Large Crowds

The joint exhibit, held under the auspices of the Ford Motor Co., and the Ford Power Equipment Exposition, the latter representing 81 manufacturers of equipment for use with Ford trucks and Fordson tractors, at the Ford Motor Company's building, Broadway and 54th St., New York City, is meeting with much success. This special exhibition was inaugurated January 5th and will run until February 2nd. The show is featuring a large number of new and unusual ideas, among them being mural paintings covering 9000 sq. ft. of canvas, prepared in the Ford studios in Detroit.

Are You an Industrial Chameleon?

Motor Truck Manufacturers Must Arrive at a Definite Policy in Sales and Merchandising. Transportation, and Not Production, Must be the Basis of Selling

By ALBERT G. METZ

THE popularity of the small truck—one-ton capacity and less—as indicated in the larger percentage of sales in these sizes, does not express a public preference as much as a condition, namely that trucks HAVE BEEN BOUGHT not sold. Had TRANSPORTATION been sold rather than vehicles, a more economical result would have been obtained, and more profit both to the makers and users."

The above is quoted from an editorial which appeared in the last issue of the Commercial Car Journal. Some truck manufacturers did not seem to get the thought we expressed in that paragraph, so we will analyze that paragraph in more detail. Let's see what it's all about:

During 1923, approximately 396,000 motor trucks were produced, of which number 49 per cent were Fords. That answers the point concerning the "popularity of the small truck."

But can the popularity of the Ford truck be attributed solely to the aggressive salesmanship of the Ford dealer?

Does the Ford dealer receive any special considerations which are not extended to any other dealer handling any other line?

Does the Ford dealer receive a larger discount than dealers of other lines?

Because the initial price of the Ford truck is lower than any other truck, does that give the Ford dealer any special advantage over his competitors?

An Emphatic No

To all of the above questions we will emphatically answer in the negative.

Any dealer who will make a personal survey will discover that the Ford dealer is primarily selling passenger cars. Like many of his competitors he is selling only as many trucks as his quota requires him to. It is said that many Ford dealers—if they had their way about it—would have nothing to do with the truck end of the business. But Ford policy makes them think otherwise. Not so long ago Ford dealers were wondering what they would do with the Fordson tractors they were called upon to handle—especially the city dealers—but Ford sales promotion showed them that the tractor wasn't a farm implement exclusively, that there was a big market awaiting Fordsons in the industrial field; and the dealers sold and continue to sell them.

Getting back to the Ford truck, why is it that Ford produced nearly half of all trucks made last year? Is it because the Ford truck is a price proposition—it's the lowest priced truck on the market—or is it perhaps because it is always on sale and ready for delivery and because body equipment is readily available? The Ford dealer doesn't do any wild trading. He has a standard trade-in price. He has a **Definite Policy** to live up to. There are no variations.

Mention truck production figures to some truck manufacturers and they immediately burst out with "Of course production has increased, but Ford built half of them. What good does that do me?" Again we say, the Ford is a price proposition and the average truck manufacturer tries to compete with the Ford product on a price basis instead of a transportation basis. If the industry would quit building and selling their stuff down to a price basis—and build up to a merchandising ideal with a definite policy—they would have a greater profit to show at the end of the year.

The small truck has won in popularity because the average dealer has let the owner BUY it. If the truck dealer had analyzed the owner's problems from an economic basis, taking into consideration the maintenance of the truck, he should certainly be able to show the owner that a price proposition will not prove economical over a period of time. Before proceeding any further, let us have it distinctly understood that we are not trying to depreciate the value of the Ford truck. As a unit for hauling one-ton or less it will do the work for which it is designed, but it is not a two-ton job, nor a two and a half or a three-ton job! It will not stand the abuse some owners give it, neither will any other piece of machinery that is made to do work for which it is not designed.

Two years ago the road building contractors became very much interested in the Ford one-ton truck for road construction. They figured entirely on the initial cost. Some of them soon discovered that this truck was not designed to stand the overloading and that the maintenance cost of the vehicle was much greater than they anticipated. Consequently many of these contractors are now back again to heavier units. All of which goes to prove that PRICE should not be the determining factor but TRANSPORTATION.

One of the things which the motor truck industry has yet to learn is to think in terms of TRANSPORTATION and NOT production! In order to build up a permanent truck manufacturing organization, there must be something more behind the enterprise than simply a desire to build a quantity of trucks each year. It isn't the dealer's fault if he doesn't get anywhere, especially when the factory asks him to make big allowances on trade-ins so as to unload the factories' surplus production. This is one of the things to which every factory should give serious thought immediately.

What really is wrong with many truck manufacturers is that they haven't any definite policy. They're industrial chameleons! First they decide to sell through dealers. They rush out and appoint dealers right and left, appointing any kind of an outfit to represent them that they can get. Before long the factory discovers that some of these dealers are not doing much to put their truck across. Of course, they're not. Nobody showed them how to sell **transportation**. The factory simply wished so many trucks on the dealers and left them to make the best of it. But when those dealers fail to get rid of their trucks, the factory decides the "dealers are a rotten bunch anyway" and that the way to sell trucks is through "branches."

In Regard to the Branch

Of course branches are all right and there are a few well known companies that have branches, but don't forget that those same companies haven't had the "big production bug" in their bonnet at the start. They developed slowly and they're mostly old timers at the business. We have nothing to say against the branch as a branch, but when truck companies make a "fizzle" out of their dealer organization, then the branch certainly won't help them out of the mess.

But let's assume, that such concerns attempt a branch policy. Very soon they discover that the branch is a tremendously expensive proposition. Naturally they haven't as many branches as they had dealers. There are few points of outlet. Production at the factory takes a slump and the branch idea doesn't look so rosy. The truck manufacturer then comes to the final stage of his career. He has tried dealers, then the branch, but they didn't pan out.

Now we come to the final method of selling trucks. Why not? Some brilliant individual in the organization conceives the wonderful idea of selling trucks by mail! Now why hasn't someone thought of that before? He figures that all he has to do is write to every fleet owner, show him how he can save a lot of money by getting 40 per cent off, how he can save the dealer's commission, etc., etc. The manufacturer mentally pictures those fleet owners grabbing their check books and ordering trucks, just as soon as they get the announcement. Somehow, those fleet owners don't respond to this truck manufacturers' latest selling scheme with any degree of alacrity. A few responses may be forthcoming, and a few "suckers" may be caught, but in a very short time bankruptcy proceedings become the order of the day. Of course, the dealers who handle this manufacturer's line are continued when possible despite the direct mail campaign method. Naturally they wonder how they can be expected to sell in competition with their own factory!

Just think of the money that the Ford Company could have saved by keeping all that commission, instead of letting their dealers have it, provided, of course, they

could maintain sales and distribution without them. All of this hectic, snap judgment selling is brought about by the usual desire of most truck manufacturers to emulate the production programs of the large manufacturers. They fail to appreciate the fact that the few large manufacturers whom they are trying to buck are well organized with sufficient sales and distribution connections and are selling their product on a transportation basis in most places.

If truck manufacturers would adopt a definite sales policy and give it a real trial, they would get somewhere. If those manufacturers would take more care in selecting their dealers, educate those dealers to sell the transportation idea and extend real assistance in the shape of merchandising information as well as facts concerning their product, the dealer would become enthusiastic over the truck business. He would succeed.

The lead must be taken by the truck manufacturer.

The selling of TRANSPORTATION by the truck field will become a reality when the manufacturer appoints dealers upon an entirely different basis than is done in most instances today.

Some manufacturers are so determined to get representation in certain communities that they go to extremes. He puts the dealer in the truck business, under the premise that he has nothing to lose and all to gain. With extreme discount, consigned trucks and service parts, the factory sales manager's figures insure large and supposedly profitable production. The dealer has nothing to lose, consequently he doesn't worry about selling those trucks. If the factory jumps on his neck he displays his interest by selling the trucks on hand at whatever they will bring about invoice. Truck dealer franchises should be salable at a premium, but they never will be if manufacturers continue such policies.

The truck industry has begun a new year. What a wonderful opportunity lies ahead of the manufacturer who has the vision to build for the future. There isn't a more necessary or vital piece of machinery in existence than the motor truck! The whole world needs more economical transportation. The motor truck is one of the units of our great transportation system—railways, waterways, highways!

The motor truck industry has been in the infancy stage long enough.

26,536 Miles Federal-Aid Roads Completed

EIGHT thousand eight hundred and twenty miles of roads of all types were completed with Federal aid during the fiscal year which ended June 30, 1923, according to the annual report of Thomas H. MacDonald, chief of the Bureau of Public Roads, United States Department of Agriculture, just published. This added to the mileage completed prior to the fiscal year, brought the total of completed projects up to 26,536 miles or more than enough to encircle the earth.

The projects under construction at the close of the year amounted to 14,772 miles and were estimated as 53 per cent complete. In addition to the 26,536 miles completed and the 14,772 miles under construction, there were at the close of the year a number of projects approved but not yet placed under construction, the aggregate length of which was 6917 miles.

An outstanding achievement of the year has been the work done in selecting the roads to constitute the Federal-aid highway system. This has been done in accordance with the provisions of the Federal Highway Act which requires that a system of roads consisting of not more than 7 per cent of the total rural mileage in each State be designated and that all Federal aid be spent on such a system. The total mileage of rural roads in the United States, as certified by the various States, is 2,859,575 miles which will limit the Federal-aid highway system to 200,170 miles. At the end of the fiscal year 35 State systems comprising 111,699 miles had been approved by the Secretary of

Agriculture and it was not thought likely that the initial program will exceed 180,000 miles.

Analysis of the approved systems for 35 States shows that of the 1111 cities of 5000 or more population in these States 1048 lie directly on the system and there is probably not one but will be connected with the system by an improved road.

A detailed study of the system indicates that it is safe to say that 90 per cent of the total population lives within 10 miles of some route on the system.

In designating the routes to be included in the Federal-aid system, the chief aim of the States and the Federal agency has been to select routes which will give the maximum of local service and connect with one another to form a great national system of highways.

In the field of highway economics important investigations have been conducted and are still being carried on. The re-emergencies of the highway as a factor in the transportation of people and goods has brought forth problems to be solved if the use and development of the highways is to be along the most economic lines. Observations have been made in Connecticut to determine the character and amount of commodities hauled by highway, the method of hauling and length of haul for commodities moving over the roads of the State.

It is estimated that 1,019,688 net tons of commodities were transported over the Connecticut highway system during the three months' period beginning September, 1922. A large part of this movement

was distinctly a service that could be rendered only by improved highways as more than a third of the tonnage moved only from 1 to 9 miles and nearly another third from 10 to 29 miles.

In recent years there has been much discussion as to methods of highway financing. In some quarters there has been expressed a feeling that the distribution of the cost to property owners and motor-vehicle operators has not been equitably adjusted. To ascertain the facts, the bureau has undertaken to make a thorough study of the sources of highway revenue. Attention has first been given to county and local road funds, four counties in Wisconsin being selected for study.

Among the significant findings some of which are at variance with opinions widely held are the following:

1. The major portion of the total highway funds are raised by townships and county units rather than by the State.
2. Real property taxation produces 62 per cent of the highway revenue derived from these counties.
3. Vehicle license fees produce 9 per cent of the total funds raised in the counties.
4. Significant reduction of real property taxation can only be made by reduction of county and local taxes.

The bureau has co-operated with universities and State highway departments in a number of special investigations such as traffic tests on road surfaces, gasoline consumption of motor vehicles and tractive resistance of various surfaces.

Handling Light Truck Service on "Main Street"

This Article Shows That Hard Work Plus Courtesy and Salesmanship Will Make the Small Town Service Station Pay a Good Profit; 75 Per Cent of the Customers Prefer Flat-Time Rates

By C. P. SHATTUCK

THAT metropolitan distributors of light trucks appreciate the influence of the satisfied owner in the smaller cities and towns as to sales and repeats, is becoming more evident. The buyer of the light truck or delivery car, as it is usually called, is as keenly interested in what it costs to operate and maintain it as his fellow business man operating a 5-ton job. It is the cost of the truck to the owner which spells success or failure for the distributor and his dealers.

RUGGIERO & WILLIAMS, Inc. 2-4 Mamaroneck Ave. White Plains, N. Y.			
LUBRICATION CARD			
Name _____	Date _____		
Address _____	Job No. _____		
Mileage on Speedometer _____	Car _____		
		Grease	Oil
Steering Head			
King Bolts			
Tie Rod Bolts			
Shackle Bolts			
Drag Link			
Generator			
Starting Motor			
Fan			
Clutch Bearing			
Transmission Gear Lub.			
Rear End Gear Lub.			
Universal Joints			
Front Wheel Bearings			
Rear Wheel Bearings			
Brake Arms and Rods			
Springs			
Hood Sills			
Horn			
Speedometer Swivel			
Distributor Gears			
Water Pump			
All Grease Cups			
All Oil Cups			
Crank Case			
Report on Condition: _____			
Mechanic's Name _____			
No. _____ Foreman's O. K. _____			
RETURN CARD TO OFFICE			

Lubrication Card Used by Mechanic Who Notes Work Needed. Sales Are Made by the Service Manager and Card Filed as a Tickler

The distributor or his dealers will not always sell the desired volume with the conventional sales and service methods. It is all very well to pass the buck to the sales department but the salesman unsupported by uniform service costs and satisfied customers cannot put the message across. Price won't do it. Neither will excessive allowances. The buyer must have service, real service and at the right price. In other words, the percentage of "repeats" is small unless the unit is kept sold as long as it is in the hands of the owner. That is why service comes before sales, particularly in the smaller places where bad news travels fast.

Some distributors are divorcing their service from sales in the smaller cities and placing service with some independent service station or garage which has the financial resources, facilities, equipment and ability to render service as required by the policy of the maker.

The authorized service station sign is very common these days but it does not always mean that a high calibre of service is rendered or that the shop has the finance, equipment or ability to build sales for the appointee.

The appointment of a garage as the authorized service station by a New York distributor early last fall has been watched with interest by the writer, especially in regard to the results obtained by the owners. This garage is located in a small city of about 24,000 where the distributor has a branch. For certain reasons it was decided to discontinue the service department and place service elsewhere but it was not easy to find the right shop although there are many in this city. Then, too, the policy of the truck maker was rigid as to parts and service policies. The shop taking over the contract would have to stock a large number of parts.

In October, Ruggiero & Williams, Inc., were appointed the official service station with a territory of about 8 miles radius. A few words about this concern are pertinent to the subject. Two years ago this February, Johnny Ruggiero and C. H. Williams took over a four story garage which had a history for failures; in fact,

two in one year. With very limited capital plus hard work and salesmanship these boys made good. Ruggiero took over the service department while Williams looked after the equipment and supply departments, fuel and oils and the garage proper. In two years the stock of \$3000 was run up to \$20,000 and no indebtedness with the banks. Many of the owners of the light trucks besides patronizing this station for service bought their equipment and supplies there as well.

When Ruggiero & Williams took over the service of the trucks they also accepted the flat-time rates, stipulated by the truck manufacturer. The flat-time rates were applied to the very first job that came in for service although the owner is given the option. If desired the owner may have his work done on the time and material basis. Records up to the time this article was written show that 75 per cent favor the flat-time rate and 25 the time and material basis. These customers are mostly old ones who are satisfied that they get real value for their money under the old system.

At the present time the jobs average about five per day. There are about 450 owners in the territory and business is increasing daily. The distributor sent out announcements to the owners and Ruggiero & Williams have been running copy in the newspaper also. They are great believers in advertising service and run copy with a punch. Taking over of the service resulted in 36 per cent increase



The Office of the Service Manager, One of the Firm, Johnny Ruggiero

in labor employed and the shop is full of work at this time of the year.

The success of this service station is due to the fact that good mechanics are employed at good wages; to the results obtained by complete shop equipment and what is most important, the boss meets the customers. Johnny Ruggiero could don the business suit and white collar but he knows that to make a service station pay a real profit it needs one member of the firm on the job early and late. He meets all customers and sells them the needed work. "Service guaranteed" is the motto. Ruggiero can be found when not down stairs meeting a customer in his office on the main service floor where he superintends details. He gives out the work and checks the men. He is the boss, service manager, foreman and tool room man. The mechanics work.

Courtesy is practiced by Ruggiero and his men. The customer is made to feel that any little wants will have as prompt and as efficient attention as a large job. Do the work right, honest value for the money and stand back of the job, are the

policies. As the customers deal direct with the boss they know what they will receive and what they will pay for.

Business in this shop is increasing daily and the writer was informed that the full force of mechanics would be kept on all winter and kept busy. Every winter the shop is full of work because Ruggiero keeps it coming in. He sells it and states "that any service station can keep its shop busy if it will get out and get the business." Ruggiero does his selling by telephone and contact with the customer who comes in with a small job. Work is scheduled ahead. The summer season is busy, of course, but mostly small jobs. The larger jobs come in the winter.

As a part of the service routine, an "investigator" calls on owners to proffer service and help and this man checks up on those owners who have drifted away. He makes out a special report. Any complaints are investigated and any misunderstandings are cleared up. This service not only aids the owner but provides opportunity to bring work into the station.

Lubrication Service and the Owner

A lubrication service also helps to establish contact with the owner. This service is on a flat-rate basis and the mechanic is required to check every item listed, also to make out a report on the condition of each unit and equipment. If a part of a unit needs adjustment, or any attention, it is reported and the service salesman follows up and sells the work. The charts are filed and repeatedly checked to see if the needed work is done. They serve as a tickler.

All work is on a cash basis. The shop is well equipped with machinery and labor-saving equipment. Ruggiero is an old time machinist and sees to it that the men have the right kind of tools to work with. This service station also contains a battery department which is rented out to the Prest-O-Lite dealer. The mechanics include an electrical expert who handles only electrical work, and a tester. All completed jobs must have the OK of Ruggiero before delivery.

One of the policies of the station is not to force sales. If an owner complains of oil pumping and wants new rings installed, he is not accommodated unless new rings are actually needed and then the cylinders are correctly "miked," and new rings only are not fitted when the block needs re-



A Franklin Valve Machine Cuts Labor Cost to the Owner

grinding. Many times the trouble is due to too much oil in the sump or too high a pressure.

The flat rate, although new, is working out profitably and will be more so as the men become more familiar with the operations.

A word as to the possibilities of profits in the service station. Many dealers say that they cannot make a profit in service. Why is it that the independent shop can and does? The records of the station discussed for the year 1923 show a net profit of over six figures which many dealers would welcome as the result of 12 months' sales. The service station made 125 per cent more net profit than the garage, equipment, supply and fuel departments and they made what is paid a high grade service manager a yearly salary. The firm of Ruggiero & Williams have made good because both men are on the job and work. They have a personal interest. They may look like employees. They are. They are working for themselves and this type invariably makes good.

Ruggiero & Williams are official service station for the Dodge and Graham trucks in White Plains, N. Y., and there are many of the former in the territory.



When Brakes Are Relined Two Mechanics Make Quick Work of the Job With the Raybestos Lining Machines

All makes of cars are brake lined on the flat-rate basis and work done for outside shops

One Hundred Million Bus Fares in Newark, in 1923

Nearly 100,000,000 passengers will be carried during 1923 by motor busses in Newark, N. J., according to estimates by Joseph Crawford, supervisor of transportation, based on the amount of gross receipts taxes paid into the City Treasury. Up to November 30th, a total of 88,650,000 passengers had been carried. This was approximately 11,000,000 more than the total for last year. The extra busses brought to Newark during the trolley strike have been withdrawn, and the number in operation during December of this year remains at 450.

Selden to Introduce New 1-1/4 Ton Model

To complete the Selden truck line and to give dealers a small unit on which a large volume of sales can be realized, the Selden Truck Corp., Rochester, N. Y. is developing a new 1-1/4-ton model which will be ready for early Spring delivery.

The new model will be one of the same construction as the heavy-duty Selden types, and will be designed to meet all the requirements for rapid light-duty transportation, according to the company. Details of construction, specifications and prices will be announced later.

Automotive Manufacturers' Association Elect Officers

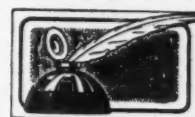
The annual election of the Automotive Manufacturers' Association at Chicago, December 7, results as follows: Noah Van Cleef Bros., Chicago, president; C. D. Pettingell, Apco Mfg. Co., Providence, R. I., vice-president; James T. Greenlee, Imperial Brass Mfg. Co., Chicago, treasurer; W. E. Green, Chicago Secretary; G. F. Disher, Gemco Mfg. Co.; H. S. Pardee, General Automotive Corp.; Frank Parizek, Illinois Brass Mfg. Co.; E. H. Heller, Hill Pump Valve Co.; Franklin Mayo, Lincoln Products Co.; C. C. Secrist, Victor Mfg. & Gasket Co., Directors.

It helps your profits when the truck line you sell is backed by fourteen years of continuous and successful manufacture—and your customers won't object to your factory having a credit rating of G-Aa for there is none higher—and when you add to that a reputation for economy and performance like **FEDERAL'S**—why your business just grows and prospers.

THE FEDERAL MOTOR TRUCK COMPANY
Detroit, Michigan.



EDITORIALS



Surrounded With Mystery

THE policy of most big organizations is to impart as much information concerning their activities to the public or the buyer as possible. They are not adverse to letting others in their particular field know what they are doing. They are not afraid to tell the world that they have representatives here and there who are doing some real things when it comes to merchandising their products. In fact they are proud of their successful representatives.

Not so, however, with quite a few motor truck manufacturers, who are scared stiff, for fear some other manufacturers might find out that they have a real dealer in this or that city. They are trying to keep that dealer from getting the share of glory he really deserves, because they feel that some other manufacturer might try to win him over to his line.

That is only one phase of the "mystery" attitude some manufacturers assume. Some think that information which is of value to the whole trade should be pigeon-holed so that nobody but their own organization should be aware of it. We refer specifically to information which concerns the servicing of their product. Many manufacturers do not have representatives in all the communities in which their trucks are to be found. They forget entirely that the truck may have to be serviced by an independent repair shop. Any information which will help that shop in servicing that truck will help retain the good will of the owner and that shop towards the truck manufacturer. It's about time some truck manufacturers realize this, as the mystery attitude they assume is not getting them anywhere. The more frank they are in all their dealings with the public and their representatives the less trouble they will experience from rumors and gossip which is doing them more harm than good—all because they are side stepping issues or trying to keep their proposition a secret. If such manufacturers would come right out into the lime-light and tell the truth about what they are trying to accomplish everyone interested would have the facts straight and competitors would not have an opportunity to spread around a lot of garbled information instead of the truth.

Overloading Damages Highways

ECONOMY of transportation should be the underlying thought whenever weight regulations are under consideration in the judgment of Thomas H. MacDonald, Chief of the U. S. Bureau of Public Roads, who testified recently on this subject before a United States Senate Committee on traffic conditions in the District of Columbia.

"Over-restrictive regulations should not be established," said Thomas H. MacDonald. "We ought to build roads that are strong enough to hold up under just as heavy loads as ought to be moved from the standpoint of economy, and no heavier."

Asked what weight limitations the Bureau recommended for motor trucks, Mr. MacDonald replied, "there is no reason for limiting the maximum weight of trucks below 28,000 lb., save under seasonable conditions."

"But maximum weight is not so much the consideration; that is, that one requirement will neither make nor break the regulation nor assist the roads greatly. It is not a question of total weight that is moved. It is a question of how much weight is concentrated upon one wheel so far as its effect on the road structure is concerned. Given a plastic surface, it is a question of how much weight is concentrated per inch width of tire. So that if we regulate the wheel load to a maximum that is not too heavy for the road to bear structurally and then limit the pressure per inch width of tire, we have accomplished the purpose without necessarily fixing the maximum load to be moved at all."

He pointed out that after all it is not so much the commercial size of the truck load which is causing trouble as it is a tendency on the part of the operator to overload. He further pointed out that speed and minimum tire thickness were important factors to be considered.

Don't forget that the owner who brings his truck into your service department for repairs may be a live prospect for a new car sale. This potential market is often overlooked by the dealer today, because it is so close to his nose that he can't see it.

News of the Trade in Brief

Motor Vehicle Legislation to be Discussed at Transport Congress

An international conference on motor vehicle legislation is announced as part of the World Motor Transport Congress in Detroit next May, by H. H. Rice, chairman of the Legislation Committee of the N. A. C. C.

"Motor vehicle legislation," says Mr. Rice in the announcement, "can either encourage or stifle motor transportation and is a question assuming importance all over the world, now that more than one hundred countries are increasingly resorting to this mode of conveyance for passengers and merchandise.

"Equitable taxation is, therefore, a problem of world-wide magnitude. In the United States attempts to solve the problem for that country are making progress and representatives of associations, of highway officials, investment

bankers, owners and manufacturers, are working jointly toward that end. The studies need, however, to regard all countries and it is hoped that the World Motor Transport Congress to be held in Detroit next May, will enable delegates to discuss them in light of their respective experiences in different parts of the globe and thus afford a basis for motor legislation believed economically most sound and best suited for international needs."

Automotive Rail Shipments for 1923

A total of 540,000 carloads of assembled automobiles and 210,000 carloads of parts and tires were handled by the railroads of the United States during 1923, according to J. S. Marvin, general traffic manager of the N. A. C. C. The railroad revenue on this traffic is estimated at \$200,000,000.

Motor Truck Exports Show a Gain in October Over Those of September

Exports of trucks from the United States in October, according to the Department of Commerce, were almost double the exports in September, contrasting strikingly with the figures for passenger cars, which showed only slight increase in value and a fractional decrease in number. The total value of all automotive products exported in October was \$15,825,569.

The month of October did not change materially the ratio of exports to production. The combined output of cars and trucks in the United States and Canada, together with the production of American manufacturers in foreign assembling plants, numbered 373,997. The total exports of cars and trucks numbered 27,922, or 7.5 per cent of the total production. For the first nine months of this year the ratio of exports to production was 8 per cent.

CONVENTIONS

- Chicago, Ill., January 14 to 19, 1924—Annual convention and good roads show of the American Road Builders' Assn., Congress Hotel, Coliseum and Greer Bldg., S. T. Henry, Chairman, Publicity Committee, 37 W. 39th St., New York City.
- Chicago, Ill., January 29 to 30, 1924—Annual convention of the National Automobile Dealers' Association, at the LaSalle Hotel.
- Chicago, Ill., January 30 and 31, 1924—4th annual meeting of the Automotive Electric Service Association, at the Congress Hotel.
- Chicago, Ill., June, 1924—Annual meeting of the National Motor Regrinder and Rebuilders' Association. Charles H. Hart, secy., 3848 N. Clark St., Chicago.
- Detroit, Mich., January 22 to 25, 1924—Annual Meeting of the Society of Automotive Engineers.
- Detroit, Mich., January 23, 1924—4th annual convention of the Michigan Automotive Trade Association, Hotel Statler.
- Detroit, Mich., May 19 to 21, 1924—National Service Congress of the National Automobile Chamber of Commerce.
- Detroit, Mich., May 21 to 24, 1924—First International Motor Transport Congress under the auspices of the National Automobile Chamber of Commerce.
- Montgomery, Ala., January 21, 1924—Annual meeting of the Alabama Automotive Trades Association.
- New Orleans, La., April, 1924—Spring meeting of the Automotive Equipment Association.

SHOWS

- Albany, N. Y., February 16 to 23, 1924—15th annual show of the Albany Automobile Dealers' Assn., State Armory. Passenger cars, trucks and accessories. J. B. Wood and L. Y. Long, Mgrs., Chamber of Commerce.
- Atlantic City, N. J., February 2 to 9, 1924—8th annual show of the Auto Trades Association of Atlantic City. Young's Million Dollar Pier. Passenger cars, trucks and accessories. E. M. Antrim, Mgr., 40 N. Albany Ave.
- Boston, Mass., March 8 to 15, 1924—22nd annual show of the Boston Automobile Dealers' Assn., Inc., Mechanics Bldg. Passenger cars, trucks, tractors and accessories. Chester I. Campbell, Mgr., 5 Park Sq., Boston.
- Calumet, Mich., April 7 to 12, 1924 (tentative)—10th annual Upper Peninsula Auto Show of Central Storage Co., and automobile dealers, Coliseum (40,000 sq. ft.). Passenger cars, trucks, tractors and accessories. Joseph A. Savini, Mgr., Calumet.
- Charlotte, N. C., March 3 to 8, 1924—4th annual show of the Charlotte Automotive Merchants' Assn., Carolinas Exposition Bldg. (60,000 sq. ft.). Passenger cars, trucks, tractors and accessories.
- Chicago, Ill., January 26 to February 2, 1924—24th National Automobile Show of the National Automobile Chamber of Commerce, Inc., Coliseum and First Regt. Armory. Passenger cars and accessories. S. A. Miles, Mgr., 366 Madison Ave., New York.
- Cleveland, Ohio, January 19 to 26, 1924—23rd annual show of the Cleveland Automobile Manufacturers' and Dealers' Assn., at Cleveland Public Auditorium (125,000 sq. ft.), and Central Armory. Passenger cars, trucks, tractors and accessories. Herbert Buckman, Mgr., 5005 Euclid Ave.
- Deadwood, S. D., February 19 to 23, 1924—12th Annual Black Hill Auto Show of the Deadwood Business Club. Auditorium. Passenger cars, trucks tractors and accessories. F. R. Baldwin, Mgr.
- Detroit, Mich., January 19 to 26, 1924—23rd annual show of the Detroit Automobile Dealers' Assn., Convention Hall. Passenger cars, trucks and accessories. H. H. Stuart, Mgr.
- Goldsboro, N. C., April 21 to 26, 1924—4th annual show of the Chamber of Commerce and local automobile dealers at Co-operative Tobacco Warehouse. Passenger cars, trucks, tractors, accessories and industrial exhibits. W. C. Denmark, Sec., Box 546, Chamber of Commerce Bldg.
- Greenville, S. C., February 25 to 28, 1924—5th annual show of the Greenville Automobile Dealers' Assn., Textile Hall. Passenger cars, trucks, tractors and accessories. Eugene B. Smith, Mgr.
- Indianapolis, Ind., March 3 to 8, 1924—27th semi-annual show of the Indianapolis Auto Trade Assn., Auto Show Bldg. (60,000 sq. ft.). Passenger cars, trucks and accessories. John Orman, 338 N. Delaware St.
- Kansas City, Mo., February 8 to 16, 1924—17th annual show of the Kansas City Motor Car Dealers' Assn., at America Royal Bldg. Passenger cars, trucks, tractors and accessories. Geo. A. Bond, Mgr., 8th Floor, Firestone Bldg., 20th and Grand Ave.
- Mankato, Minn., February 27 to March 1, 1924—2nd annual show of the Mankato Automobile Dealers' Assn., Armory (10,000 sq. ft.). Passenger cars and trucks. E. T. Dillner, Sec., 320 S. 2nd St.
- Minneapolis, Minn., February 2 to 9, 1924—17th annual show of the Minneapolis Automobile Trade Assn., passenger cars, trucks, accessories and industrial exhibits. Walter R. Wilnot, Mgr., 709 Andrus Bldg.
- Milwaukee Wis., January 19 to 26, 1924—16th annual show of the Milwaukee Automotive Dealers' Assn., Auditorium (120,000 sq. ft.). Bart J. Ruddle, Mgr., 319 Brumder Building.

Coming Events

- Montreal, Canada, January 19 to 26, 1924—Annual National Motor Show of Eastern Canada. Auspices of Montreal Automobile Trade Association. Henry Morgan & Co., Department Store (105,000 sq. ft.).
- New York, N. Y., January 22, 1924—Joint meeting of the Engineering Section of the National Safety Council and the American Society of Safety Engineers, at Engineering Societies' Bldg., 29 W. 39th St.
- Omaha Neb., February 18 to 23, 1924—19th annual show of the Omaha Automobile Trade Assn., Municipal Auditorium. Passenger cars, trucks and accessories. A. B. Waugh, 1814 Douglas St.
- Portland, Me., February 29 to March 5, 1924—10th annual show of the Portland Automobile Dealers' Association, at Exposition Bldg. Passenger cars, trucks, tractors and accessories. Howard B. Chandler, Mgr., 5 Park Ave.
- Portland, Ore., February 9 to 16, 1924—14th annual show of the Automobile Dealers' Assn. of Portland, Inc., Auditorium or Coliseum. Ralph J. Staehli, Sec., 424 Henry Bldg.
- San Bernardino, Cal., February 15 to 25, 1924—Automobile show at the 14th Annual National Orange Show, in tent on Orange Show Grounds. Passenger cars, trucks, tractors and accessories. R. H. Mack, Gen. Mgr. Chamber of Commerce Bldg.
- San Francisco, Cal., February 16 to 23, 1924—8th annual show of the Motor Car Dealers' Assn., of San Francisco at Exposition Auditorium. Passenger cars, trucks, tractors, accessories, special tops and bodies. G. A. Wahlgreen, Mgr., 215 Humboldt Bank Bldg.
- Springfield, Ill., March 20 to 22, 1924—5th annual show of the Springfield Auto Dealers' Assn., at Springfield Arsenal. Passenger cars, trucks and accessories. Basil W. Ogg, Mgr., 213 East Capitol Ave.
- Syracuse, N. Y., February 25 to March 1, 1924—16th annual show of the Syracuse Automobile Dealers' Assn., Inc., at the State Armory. Passenger cars, trucks and accessories. C. H. Hayes, Mgr., 701 Eckols Bldg.
- Trenton, N. J., February, 1924—9th annual show of the Trenton Automobile Trade Assn., at 2nd Regt. Armory. Passenger cars, trucks and accessories. Harold Brooks, Sec., E. Hanover St.
- Troy, N. Y., February 2 to 9, 1924—10th annual show of the Troy Automobile Dealers' Association, at Troy State Armory (65,000 sq. ft.). Passenger cars, trucks, tractors and accessories. Frank M. Baucus, Mgr., cor. Congress and River Sts.
- Washington, D. C., March 8 to 15, 1924—Annual Spring automobile show of the Washington Automotive Trade Association, at Convention Hall. Passenger cars, trucks, and accessories. Rudolph Jose, Chairman Show Committee, 1138 Connecticut Ave.

Boyce Resigns From Active Participation in Moto-Meter

Harrison H. Boyce, inventor of the Moto-Meter, has resigned from active management of the Moto-Meter Co., Inc., to devote more time to the promotion of his new product, Boyce-ite, an automotive fuel ingredient. E. H. Hennecke, who for the past five years has acted as sales manager for the Moto-Meter Co., Inc., will take Mr. Boyce's place as general manager and the presidency will continue in the hands of George H. Townsend, who has been serving in that capacity since the organization of that company in 1912.

Mr. Boyce has made the following statement, in part, concerning his retirement: "My retirement from active management from the Boyce Moto-Meter Co., to undertake personally the exploitation of Boyce-ite, does not mean that I have disposed of my financial interest in the Moto-Meter company or that I have not a voice in its affairs; they will also continue in the future, as they have in the past, to operate as exclusive license of the Boyce patents. I am simply reversing my former procedure, giving the major portion of my time to Boyce-ite and the minor to the Moto-Meter Co., as in the past I have given practically all my time to the Moto-Meter and had intrusted the affairs of Boyce-ite to what was then a young and growing organization."

Belmont Motors Purchased by Kearns-Dughie

The Kearns-Dughie Motors Corp., Danville, Pa., has purchased outright all assets of the Belmont Motors Corp., Lewistown, Pa., which includes machinery, trucks, parts and plant. With this modern plant of 70,000 sq. ft. of floor space, the purchaser will be in a position to greatly increase its production of 1 to 5-ton commercial trucks, special fire apparatus of 350 to 1000 gal-per-min. pumps, chemical trucks, various kinds of commercial bodies and hoists.

Lewistown is ideally located on the main line of the Pennsylvania, R. R. and will afford an excellent distributing point for dealers who wish to drive trucks from the factory. Manufacturing will be carried on at Lewistown while the Danville plant will be used as branch for sales and service in that section.

Moving will have no effect on production owing to the equipment already at Lewistown, and by Spring the company expects to be in full swing on production of all its units.

Ford to Reclaim Metal From Iron Ore Dust

The reclaiming of tons of blast furnace dust that has been accumulated at River Rouge, Mich., is one of the plans of the Ford Motor Co., in their policy of eliminating waste. Fifty per cent of this dust is claimed to be iron ore. A sintering plant has been erected in close proximity to the two big blast furnaces of the Ford plant and reclaiming operations have been begun.

Dodge Brothers Sales Manager to Speak at N. A. D. A. Chicago Convention

A discussion of the various things a factory can do for its dealers and what it can't do, will be made at the Seventh Annual Convention of the National Automobile Dealers' Association at Chicago, January 29, by John A. Nichols, Jr., of Detroit, general sales manager of Dodge Brothers, Detroit. While Mr. Nichols' subject will be "Dodge Brothers and Its Dealers," his message in a way will summarize the program that all manufacturers are working toward, in maintaining dealer stability and prosperity.

In its sales promotion department, which is regarded as one of the most advanced maintained, Dodge Brothers constantly impress upon the dealer that he is running what amounts to an automobile department store. Five separate and distinct divisions of the business are recognized and classified: new car sales, used car sales, service labor sales, service parts sales, and accessory sales and it is insisted that each one of these departments must be operated at a profit.

Three years ago Dodge Brothers adopted a standardized accounting system and use of this system by its dealers has been made compulsory.

The National Automobile Dealers' Association convention is open to all dealers whether or not members of the association. Special reduced rates of a fare and one-half round trip have been granted by the railroads to members of the association.

PROGRAM N. A. D. A. SESSIONS

- Tuesday, January 29
19th Floor, La Salle Hotel, Chicago
- 10 A. M. Call to Order: G. G. G. Peckham, Cleveland, Ohio, President, N. A. D. A., Presiding. Report of General Manager: C. A. Vane. Automotive Forecast of 1924: J. H. Collins, Manager Commercial Survey Dept., Chilton Company, Philadelphia.
 - 11.00 "5 Per Cent Net": C. E. Gambill, Vice-President, N. A. D. A.; President, Gambill Motor Car Co., Chicago, Ill.
 - 11.15 Appointment of Committees. Lunch.
 - 12.30 Call to Order.
 - 2 P. M. "Dodge Brothers and Its Dealers": John A. Nichols, Jr., Sales Manager Dodge Brothers, Detroit, Mich.
 - 2.15 "Shakespeare as a Salesman": William B. Burrus, Sales Consultant, Kansas City, Mo.
 - 3.00 Adjournment.
 - 4.15 Sixth Annual Trade Frolic and Dinner. Address: "Building a Sales Organization," G. H. Abercrombie, Sales Manager Fuller Brush Co., Hartford, Conn.
 - 6.00 Wednesday, January 30
 - 10 A. M. N. A. D. A. Records for Dealers' Dollars: Harry M. Fancher, C. P. A., Secy-Treas. Tom Botterill, Inc., Denver, Colo., formerly with Haskins & Sells. Merchandising Used Cars.
 - 10.45 The Appleby Plan: James E. Appleby, The Percy Chamberlain Associates, Inc., Detroit, Mich.
 - 11.30 The Atlanta Statistical Bureau: R. H. Martin, President Martin-Nash Company, Atlanta, Ga.
 - 2 P. M. Lunch.
 - Cleveland Dealers' Green Seal Results: R. J. Schmunk, Hudson-Essex Distributor, Cleveland, Ohio.
 - 2.45 N. A. D. A. Leadership: A \$50,000,000 Asset: Lynn M. Shaw, Asst. Gen. Mgr., N. A. D. A. New Business: Revision of By-Laws; Election of Officers; Adjournment.

Safety Engineers and Safety Council to Hold Joint Meeting

A joint meeting of the Engineering Section of the National Safety Council and the American Society of Safety Engineers will be held on January 22, at the Engineering Societies Building, 29 West 39th St., New York City. The always interesting subjects of handling material and gas and electric welding will be featured on the program.

Parts Manufacturers Endorse Mellon Tax Plan

Emphatic endorsement of Secretary Mellon's program for tax reduction is contained in a resolution adopted by the board of directors of the Motor and Accessory Manufacturers Association made public by M. L. Heminway, general manager.

The resolution follows:

RESOLVED, that we heartily approve the plan for reducing federal income taxes recommended by the Secretary of the Treasury in his letter of November 10th to Congressman Green. We believe that if made effective this plan will be of very material benefit to the whole people of our country.

First, by more equitably distributing the tax burden, relieving the wage earner of his disproportionate share of the load.

Second, by demonstrating the policy of good government, through providing for reasonable budget requirements by an intelligent, logical and fair method of apportionment.

Third, by stimulating industry through the release to industry of funds now invested in tax exempt securities, thereby materially increasing our national prosperity.

Court Sustains Timken in Trade Name Injunction

A permanent injunction enjoining and restraining the Shuman-Tigar Bearing Co., Inc., M. George Tigar Bearings Co., Inc., and M. George Tigar, defendants, "from selling or in any manner advertising, representing or offering for sale any roller bearings or parts thereof manufactured, assembled, converted, altered, rebuilt or repaired by said defendants or any of them as 'Timken Roller Bearings' and from using the name 'Timken' or any name, designation or description of which the name 'Timken' forms a part in any manner whatsoever in connection with the sale, advertising or offering for sale of such roller bearings or parts thereof: * * * *," in the case of the Timken Roller Bearing Co., vs. the above named defendants. The decision was handed down by Judge Hand in the United States District Court for the Southern District of New York.

Elects Officers

The annual stockholders' meeting of the National Tire & Rubber Co., of East Palestine, Ohio, resulted in the election of the following officers: C. L. Merwin, president; C. E. Miley, vice-president and general sales manager; C. W. Helman, treasurer; and L. M. Kyes, secretary.

Service Conference in Detroit in May 1924

The board of directors of the National Automobile Chamber of Commerce has approved of the plan of the service committee to hold a national service conference or congress at Detroit, May 19, 20, 21, 1924. The desirability of such an event was introduced at the November meeting at Dayton where it met with unanimous and enthusiastic support. On December 12, the executive committee of the service committee held a meeting and formulated plans to organize for the May event which will be the greatest service convention ever planned, inasmuch as it will bring together every branch of service in the industry from the service man of the small shop to the manufacturer. The meeting will be an open one and the various ramifications of service will be discussed by authorities. In connection with the convention it is planned to hold an exposition of service station equipment and tools. This will be strictly an invitation affair so far as the exhibitors are concerned.

Cylinder Regrinders Form National Association

The birth of a national organization made up of the leading cylinder regrinders of the country took place at the Lexington Hotel, Chicago, November 27 and 28. The new body will set sail as the National Motor Re grinder & Rebuilders Association. The roll call at the meeting showed the following associations and delegates represented with full authority from their membership: American Cylinder Grinders Association, Chicago (W. A. Baker, president, Walter Ryser, vice-president, J. H. Trindl, treasurer, Charles H. Hart, secretary); Association of Cylinder Grinders of Missouri and Illinois, St. Louis, (John E. Percival, secretary) Central Cylinders Regrinders Association, Indianapolis, (T. A. Meyer, president) Metropolitan Cylinder Grinders Association, New York City, (Dwight W. Grover, president) Midwest Regrinders Association, Omaha, Nebr., (John J. Fuchs, Jr., president) and the Southern Automotive Grinders Association, Memphis, Tenn., (J. B. Cook, president)

The election of officers of the N. M. R. & R. A. resulted as follows: J. J. Fuchs, Jr., president; J. B. Cook, vice-president; Dwight C. Grover, treasurer and Charles H. Hart, secretary. The above names officers and John E. Percival and T. A. Meyer constitute the board of directors.

The following committee chairmen were appointed by President Fuch: Robert C. McWane, 1 Broadway, New York City, Membership Committee; J. B. Cook, 278 Washington Ave., Selling and Advertising Committee; John E. Percival, 4124 Olive St., St. Louis, Production and Shop Methods; John J. Fuch, Jr., 1007 Farnam St., Omaha, Neb., Accounting Committee and T. A. Meyer, Modern Elec. & Machine Co., Indianapolis, Adjustments and Trade Practice Committee.

By-laws of the Association state that membership shall be open to any district association in the U. S. and Canada whose membership is comprised of individuals or organizations engaged principally in the cylinder grinding business or who maintain a department for cylinder grinding and use recognized mechanical equipment for performing the service, and who shall agree to abide by the rules and regulations of the National organization.

The object of the Association is:

To promote the general welfare and progress of the Cylinder Grinding Industry in the United States and Canada, to aid in the development and success of its members, to demonstrate that the good of one is the good of all, and to work closely together in earnest and active co-operation so that the cylinder grinding business shall continue to expand and take its rightful place in the industry. To create a feeling of friendship among the various organizations and to promote and encourage a high standard of business ethics. To inspire in the members of the Association a desire to perform their service to their customers with the first object in mind of quality, second, of service and third, at a price which will enable them to earn a fair margin of profit. To encourage the use by members of the association of only such material as is considered of proper standard, and to encourage the use of such instruments as will enable them to intelligently reject unsatisfactory products and thus maintain a high standard of quality.

Chicago was again selected by the National Association as the place for the June 1924 meeting.

California Has 677 Automotive Transportation Lines

A total of 677 automobiles transportation lines are in operation in the state of California according to a check made on the records of the automotive department of the Railroad Commission of California. Of these carriers, 164 carry freight exclusively and 133 carry passengers only. Passengers and freight are transported by 107 and passenger and express by 138. School children are carried by three, and one is devoted exclusively to the transportation of express. Passengers, freight and express are carried by 39 and 24 carry only freight and express.

Listed under the head of "Specials" are 68 carriers whose cargoes are limited to certain commodities such as milk and cream, eggs and poultry, lumber, auto parts and accessories, films, fresh fruits and vegetables and berries. In most instances the fruit and vegetable and berry carriers are seasonal operators, limiting their hauling to the periods of the year in which the particular crop specified in the operating permit granted by the commission is harvested.

Under a recent amendment to the Auto Stage and Truck Transportation Act those who transport direct from or to farm, orchard or dairy no longer have to secure a certificate under which to operate. They must, however, file their rates with the commission.

Hawkins Retires From General Motors Corporation

Norval Hawkins, one of the outstanding figures in the automotive industry, retired as general consultant of the General Motors Corp., to resume private business for the present. In a statement announcing Mr. Hawkins' retirement, Charles S. Mott, vice-president of GMC says "it is not believed that Mr. Hawkins will retire long from active participation in the automotive industry."

On April, 1921, Mr. Hawkins was made director of sales-advertising and service on the advisory staff of General Motors. It was thought at that time that the work in which he was engaged would only last a year, but the magnitude of the various problems coming up for consideration, necessitated an extension of the time until March 1923. Since then, at the request of the Corporation, he has continued as general consultant to the executive committee.

Asbestos Brake Lining Association Elects Officers

The annual meeting of the Asbestos Brake Lining Association, a national organization of manufacturers, was held at the Hotel McAlpin, New York City, on December 12, when the following officers were elected:

President, M. F. Judd, of the Raybestos Co., 1st vice-president, A. W. Koehler, of the Asbestos Textile Co., 2nd vice-president, R. J. Stokes, of the Thermoid Rubber Co., commissioner, A. A. Mowbray, of New York City.

A vote of thanks was extended to retiring President Summer Simpson, of the Raybestos Co., and his associates on the Administrative Committee.

Vice-President Koehler, who presided, appointed the following committee to call on the Hon. Herbert Hoover, secretary of commerce, regarding the work of the U. S. Bureau of Standards; J. W. Perry, of the Johns-Manville Co.; W. E. Fisher, of the Russell Mfg. Co.; J. M. Weaver, of the Keasbey & Mattison Co., and N. B. Misell, of the Asbestos Textile Co.

The following manufacturers were admitted to membership: Asbestos Spinning & Weaving Corporation, H. W. Johns-Manville, Inc., the Multibestos Co., and the Palmer Asbestos & Rubber Corp.

It was decided that the association should continue its support of the National Brake Inspection Movement, a campaign designed to impress upon the motoring public the importance of brake inspection at periodic intervals.

Republic Rubber Making 1200 Tires Daily

Operations at the plant of the Republic Rubber Corp., Youngstown, Ohio, are between 70 and 75 per cent of capacity. About 1200 tires are produced daily. The factory is now employing 1200 men and expects to soon increase this number to 1800 or 2000.

Large Attendance Anticipated for S. A. E. Convention

It is expected that the attendance at the annual sessions of the Society of Automotive Engineers, which will be held for the first time in Detroit, during the Detroit automobile show will be at least 50 per cent greater than at any of the previous annual sessions.

H. W. Alden, chairman of the board of directors of the Timken-Detroit Axle Co., who is president of the S. A. E., believes that the larger attendance will result from the sessions being held in Detroit.

For the last 10 years the sessions of this society have been held in New York during the national automobile show there. They will be held this year in Detroit from January 22 to 25, morning sessions being held in the huge auditorium of the General Motors building and evening sessions on the 15th floor of the same building.

Although simultaneous sessions will be scheduled, the topics will be so arranged that very little conflict will occur between papers on related subjects. Present plans call for four sessions on engines, fuels and chassis; three body meetings are scheduled; aeronautical subjects will require two sessions; two meetings will be devoted to trucks and busses, and at least two production meetings will be held.

Mason P. Rumney, who is chairman of the meetings committee, has already appointed the following chairmen of the sub-committees: Engine, fuel and chassis—Thomas J. Little, Jr.; production—K. L. Herrman; aeronautical—Prof. E. P. Warner; truck and bus—F. C. Horner, body engineering—A. L. Knapp.

Trailer Manufacturers' Association Elects New Officers

M. E. Crow of the Troy Trailer and Wagon Co., was elected president of the Trailer Manufacturers' Association of America at a regular meeting held in the Hotel Statler, Detroit, on December 4th. Mr. Crow succeeds J. H. Fertig, president of the Arcadia Trailer Corp., who resigned after a service of several years as president.

Other officers elected were: first vice-president, H. C. Fruehauf of the Fruehauf Trailer Co., Detroit; second vice-president, S. B. Winn of the Lapeer Trailer Corp., Lapeer, Mich.; secretary-treasurer, Henry M. Wood of the Trailmobile of Cincinnati, Ohio. Allan P. Ames, who, had been acting as secretary of the Membership Committee, under the chairmanship of Mr. Wood, was formally appointed manager of the Association and headquarters were definitely established at Mr. Ames' office in New York. The only change in the executive committee was the election of S. E. Liedabrand, of the Automotive Trailer Corp., Springfield, Ill., to fill the place vacated by the resignation of President Fertig.

The meeting was the first one held since the reorganization meeting also held in Detroit, on July 10th. The members decided that the activities of the Association should be confined, for the present at

least, mainly to legislative work and co-operative publicity. It was proposed that efforts be made to raise a co-operative advertising fund to which each trailer manufacturer be asked to contribute on a sales quota, but after some discussion this question was postponed to come before a later meeting.

Frank Schmidt of Toledo, Ohio, president of the Ohio Commercial Haulers' Association, and a delegation of Ohio trailer dealers asked the help of the Association in the litigation now in progress in Ohio to obtain a favorable interpretation of Section 7246 of the State Highway Law. In this case the lower courts have held that a motor truck with semi-trailer attached should be regarded as only one vehicle and that its maximum load should be limited accordingly. The trailer dealers and haulers contend that a semi-trailer thus attached is a separate vehicle.

Although the meeting decided that the Association as an organization could not appropriate funds for a purely intrastate contest, several of the members present agreed to contribute to the costs of this litigation in their private capacity.

The Constitution of the Association was amended by creating a new class of membership to be known as "Associate Members" to which shall be eligible firms manufacturing only trailer parts and firms with which the manufacture of trailers is a comparatively minor branch. Associate members shall not have the power to vote or hold office.

Trucks on Farms Represent 25 Per Cent of Machines Reported

Automobiles on farms are used mainly for business purposes with comparatively little use made of the machines for pleasure, the United States Department of Agriculture has learned in recent farm management surveys. On 1371 farms surveyed, 923 farmers reported the ownership of 1000 passenger cars or trucks. The owners of the cars stated that two-thirds to nine-tenths of the use of the machines was for farm business.

In the Atlantic Coast area covering Chester County, Pennsylvania, 58 per cent of the 423 farmers interviewed had machines. In Middle-Western areas covering portions of Kansas, South Dakota, and Colorado, 70 to 85 per cent of 383 farmers reported machines. In Washington and Idaho in the Palouse area 86 per cent of 250 farmers reported ownership of cars. The only region where less than 50 per cent of the farmers owned automobiles was in the dry farming wheat area where 315 farmers reported only 152 machines.

The touring car is the most popular type of automobile with these farmers as it can be used for all purposes, from hauling milk or feed to taking the children on Sunday picnics. Two-thirds or more of all machines reported were touring cars. Trucks come next in popularity, about 25 per cent of all machines reported being trucks. Roadsters, sedans and coupes were less frequently reported, totaling less than one-tenth of all machines used.

Empire State Association Acts on Legislation

Active participation in the discussion of legislative questions affecting the taxation, regulation and use of automobiles in the state of New York was voted unanimously by the first annual convention of the Empire State Automobile Merchants' Association in session in Syracuse, N. Y.

The convention was the best attended and most enthusiastic meeting of automobile men ever held in that state. More than two hundred and fifty dealers from all parts of the state were present. Earnest discussion of the gasoline tax, the proposed licensing of all drivers, state-wide snow removal program, and compulsory liability insurance resulted in a resolution authorizing the president to appoint a committee to frame a legislative program and to submit it to the various local associations. The program will be considered in detail by all members of the association to the end that the opinion of the association expressed in Albany may be the real opinion of the automobile trade rather than assumptions as to what that opinion may be.

The new officers of the association elected by the convention are: President, E. J. Ellis of Rochester; first vice-president, Horace Rayno of Albany; second vice-president, R. G. Smith of Rome; secretary, L. D. Clute of Elmira; treasurer, Joseph F. Haas of Brooklyn; directors in addition to the above, C. W. Bull of Syracuse and W. W. Garabrant of Utica. Edward A. Moree of New York City was continued as general manager and legislative representative.

Schuster Leaves M. & A. M. A. to Enter Publishing Field

The Motor and Accessory Manufacturers' Association announces the resignation of M. Lincoln Schuster, effective January 1st.

M. Schuster is leaving to become president of the firm of Simon and Schuster, Publishers, with offices at 37 West 57th Street, New York City. His associate, Richard L. Simon is now an executive of Boni & Liveright, publishers, New York.

"In his several capacities as assistant to the general manager, manager of the Educational Department, secretary of the Advertising Managers Council and secretary of the Foreign Trade Committee, Mr. Schuster has demonstrated marked ability," said General Manager M. L. Heminway in making the announcement. "Arrangements have been made whereby he will continue to handle certain features of the Educational Department work as counsel and adviser, and will represent the Association in its contact with the press.

"During the four years of his connection with the Association he has endeared himself to his associates and has earned the respect and high regard of a large host with whom his work brought him in contact, all of whom wish him unqualified success in his new enterprise."

Electric Truck School Under Way in New York

The course of instruction designed for operators of electric trucks and garage attendants held under the auspices of the New York Electric Vehicle Association, opened in the Auditorium of the Consolidated Gas Company's Building, Irving Place and 15th St., New York City, December 5th, with a lecture on the subject of the "Chassis," delivered by E. L. Clark, of the Commercial Truck Co., assisted by A. K. Brumbaugh, of the Autocar Company. On December 19th, the subject of "Lubrication," was discussed while on January 9th, the matter presented covered "Batteries."

Charles R. Skinner, Jr., secretary of Committee has announced the following regulations covering the course:

"The meetings will open promptly at 7:30 p. m., with a lecture covering some feature scheduled in the course. In some of the discussions there will be stereopticon and motion pictures.

"The cost of the entire course is \$1.00 per registrant. If remittance has not been made either by yourself or your company to cover your enrollment, please forward your check for \$1.00 to Mr. S. C. Harris, treasurer, 32 Horatio St., New York City.

"Any enrolled person who absences himself for more than two consecutive evenings will be automatically dropped from enrollment and will not be permitted to further attend sessions in the course.

"There will be representatives of the various manufacturers present at the laboratory sessions which will follow the lectures, to explain the chassis, batteries, switchboard, etc., in detail. This enables those who have problems that perplex them, to secure the information that they may desire.

"At the close of the term certificates for attendance signed by the chairman and secretary of the committee, will be awarded to those who have attended every session in the course. Those certificates will have a value in securing employment or advancing in your present position."

The schedule for the 1924 sessions is as follows:

January 23—Charging Equipment.
Otto Sarvas, Westinghouse Elec. Co., or
K. B. Jones, General Elec. Co.
February 6—Motors and Controllers.
Otto Bahls, A B Elec. Vehicle Co., or
Mr. Clendenin, General Elec. Co., Lynn,
Mass.
February 20—Inspections, Maintenance and
Repairs of Electric Vehicles and Routine
Practices in the Garage and Repair Shop.
Mr. Simmons, Consolidated Gas Co., or
F. H. Bronson, Electric Storage Batt. Co.
March 5—Fleet Operation.
Mr. Britt, Ward Baking Co.
March 19—How to Secure Greatest Mileage
Out of a Truck.
Fred Smith, Electro Co.
April 2—History of Development of Electric
Transportation.
E. J. Ross, Autocar Co.
April 16—Garage Management.
H. V. Middleworth, Consolidated Gas Co., or
J. L. Lufkin, United Elec. Lgt. & Pwr. Co.
April 30—Transportation Problems.
John Stilwell, Consolidated Gas Co., or
A. G. McKeever, Ajax Trucking Co.
May 14—General Talk on Electric Vehicle.
J. C. Boyers, Ward Motor Vehicle Co.
May 28—Entertainment and Smoker.
Distribution of Certificates of Attendance.

Pierce-Arrow Will Not Discontinue Truck Production

An authoritative statement issued by Myron E. Forbes, president of the Pierce-Arrow Motor Car Co., denies emphatically any intention on the part of the Pierce-Arrow Company, to discontinue the manufacture of motor trucks. A number of unfounded reports to this effect have been in circulation for the past few months.

"There is absolutely no basis for any report that Pierce-Arrow intends to discontinue truck production," stated Mr. Forbes. "In fact there is no possible reason why we should consider such a step. This is especially true in view of the splendid increase in our truck business this year, which is fully fifty per cent greater than it was in 1922.

"Throughout the year we have been strengthening our position in the truck field in every conceivable way. In order to meet the requirements for time selling, we have organized our own finance company primarily to handle time truck sales. We have conducted an aggressive national advertising campaign this year and have already laid out an even larger campaign of truck advertising for next year.

"In order to develop the New England truck field a five year lease has just been signed on a sales and service building in Boston which will be devoted entirely to truck merchandising in that territory. All our promotional and selling efforts are being stressed to expand the truck business.

"The truck department has just brought out a new motor bus and we have sufficient orders already on hand to indicate that the bus is going to be a material factor in augmenting our sales next year. The truck has been a prime part of the Pierce-Arrow business for more than twelve years. The Pierce truck in the universal opinion of the owner is regarded as standing in a class by itself both in the quality of its workmanship and in the low cost of upkeep. This is our answer to any suggestion that the Pierce-Arrow Company has any plans which could possibly include either a discontinuance or a curtailment of truck production."

Automotive Speakers at Petroleum Convention

Of particular interest to the automobile men was the fourth annual meeting of the American Petroleum Institute at the Statler Hotel, St. Louis, December 11 to 13. Recognizing the importance of the automobile in the progress of the petroleum industry, the Institute had included a number of automotive authorities on the program.

At one of the group sessions Wednesday morning, H. C. Dickinson, of the U. S. Bureau of Standards spoke. During the afternoon, W. S. James, of the U. S. Bureau of Standards spoke on "The Service Tests of Lubricants in Automotive Engines." He was followed by an address by Thomas Midgley, Jr., chief engineer of the Fuel Section, General Motors Research Corp., "The Progress of Anti-Knock Fuels." "What the Automotive and Oil Industries Can Do for Each Other," was the subject of an address by H. L. Horning, president of the Waukesha Motors Co. (representing the S.A.E.).

One of the features of the annual dinner held in the ball room Thursday evening was the speech of C. F. Kettering, president of the General Motors Research Corp.

Settlement Reached in Timken-Gilliam Case

The Timken Roller Bearing Co., of Canton, Ohio, has issued the following statement concerning the Timken-Gilliam case:

"The case of the Timken Roller Bearing Co., against the Gilliam Manufacturing Co., which involved claims of the respective parties set forth in their pleadings was terminated December 11, by a decree which was agreed upon by all parties.

"When the case was reached for trial in the Common Pleas Court at Canton, Ohio, a conference was entered into between the parties and their attorneys, in which conference both sides took the position that a fair and complete statement of the various contentions of the parties might lead to a satisfactory adjustment and thereupon full discussion was had.

"It was agreed that the Timken Co. had spent large sums of money in developing special machinery to be used in its roller bearing business, and this was especially true of its rotary hearth furnaces and its automatic roll grinding machines. In equipping the factory of the Gilliam Manufacturing Co., that company had substantially duplicated such roll grinding machines and such rotary hearth furnaces and consequently the decree as agreed upon provides that within the period of eighteen months one-half of the machines of these two types installed by the Gilliam Manufacturing Co. shall be dismantled and that within a further period of six months the remainder of such furnaces and machines shall be dismantled and thenceforward that company is enjoined from using similar furnaces and machines; but it is further provided that the Gilliam Manufacturing Co. shall be free to purchase in the open market machines with which to do the work of such furnaces and roll grinding machines, or it may design and perfect machines for such purposes, but any machines to be designed by the Gilliam Manufacturing Co. shall not embody the same construction as the two machines of the Timken Roller Bearing Co., above mentioned.

"All other matters in controversy between the parties, including their respective claims for damages and for an accounting, are dismissed."

Automobile Club Forms Commercial Car Section

A commercial car department is now functioning with the Automobile Club of Maryland. At a meeting in December, a committee of 18 was appointed representing the following interests: delivery cars, taxicabs, electric trucks, van owners, funeral and private livery cars, passenger cars on prescribed route and freight carriers on prescribed route. The new department will look after the general interests of all truck owners and lay emphasis upon the enactment of proper legislation in the state.

Replacement Table—Corrected Monthly

Including Piston Ring Sizes, Carburetor Sizes, Hose Sizes, Fan Belt Sizes, Brake Lining Sizes and Truck Frame Dimensions

* Note: Under Carburetor Inlet Diameter Will be Found Either the Size of Main Air Intake or the Gasoline Fuel Line
Fan Belt Type: V—V-Shape, F—Flat, R—Round

NAME, MODEL AND TONNAGE	ENGINE										BRAKE LINING				FRAME												
	Piston Rings		Carburetor		Upper Hose		Lower Hose		Fan Belt		Service		Emergency		Length		Width										
	No. per Cyl.	Width	Outlet Diameter	Inlet Diameter ★	Vertical or Horizontal	Length	Width	Length	Width	Length	Width	Type	Length	Width	Thickness	No. of Pieces	Length	Width	Thickness	No. of Pieces	Back of Driver's Seat	Driver's Seat to Center of Rear Axle	Over All	Over All	Clearance at Lowest Point of Chassis		
Ace 40-1 1/2	3	1 1/4	1 1/4	1 1/4	V	7	1 3/4	8	1 1/4	40 5/8	2	F	12	13 1/2	3 1/4	1/4	4	12	13 1/2	3 1/4	1/4	4	122 1/2	76 3/4	215 1/4	32	9 1/2
Ace 60-3	3	1 1/4	1 1/4	1 1/4	V	10	1 3/4	15	1 1/4	42 5/8	2	F	13 1/2	13 1/2	3 1/4	1/4	4	13 1/2	13 1/2	3 1/4	1/4	4	Opt	84 1/2	241	34	11
Ace 20-1	3	1 1/4	1 1/4	1 1/4	V	11	1 3/4	11	1 1/4	38 3/4	2	F	12	12	3 1/4	1/4	4	11	11	3 1/4	1/4	4	110 3/4	63 3/4	194	34	10 1/2
Ace 30-1 1/2	3	1 1/4	1 1/4	1 1/4	V	11	1 3/4	11	1 1/4	38 3/4	2	F	12	12	3 1/4	1/4	4	11	11	3 1/4	1/4	4	110 3/4	63 3/4	194	34	10 1/2
Ace 40-2	4	1 1/4	1 1/4	1 1/4	V	8	1 1/4	11	1 1/4	40	1 1/2	F	12	12	3 1/4	1/4	2	12	12	3 1/4	1/4	2	123 1/2	74 3/4	208	34	9 1/2
Ace 40L-2	4	1 1/4	1 1/4	1 1/4	V	11 1/2	1 3/4	12 1/2	1 1/4	39 1/2	1 1/2	F	13	13	3 1/4	1/4	2	12	12	3 1/4	1/4	2	123 1/2	74 3/4	214 1/4	34	10
Ace 60-2 1/2	4	1 1/4	1 1/4	1 1/4	V	11 1/2	1 3/4	12 1/2	1 1/4	41 1/2	1 1/2	F	13	13	3 1/4	1/4	2	13	13	3 1/4	1/4	2	132 1/2	79 3/4	223 1/2	34	10 1/2
Ace 60L-3	4	1 1/4	1 1/4	1 1/4	V	11 1/2	1 3/4	12 1/2	1 1/4	41 1/2	1 1/2	F	15 1/2	15 1/2	3 1/4	1/4	2	15 1/2	15 1/2	3 1/4	1/4	2	140 1/2	79 3/4	235 1/2	34	10 1/2
Ace K (Bus)	4	1 1/4	1 1/4	1 1/4	V	12 3/4	1 3/4	12 1/2	1 1/4	41 1/2	1 1/2	F	15 1/2	15 1/2	3 1/4	1/4	2	15 1/2	15 1/2	3 1/4	1/4	2	220 1/2	127 3/4	312	41 3/4	6
Ace 90-3 1/2	4	1 1/4	1 1/4	1 1/4	V	10	1 3/4	10	1 1/4	40 1/2	1 1/2	F	15 1/2	15 1/2	3 1/4	1/4	2	15 1/2	15 1/2	3 1/4	1/4	2	150 1/4	95 3/4	243	36	10 1/4
Ace 90L-4	4	1 1/4	1 1/4	1 1/4	V	10	1 3/4	10	1 1/4	40 1/2	1 1/2	F	15 1/2	15 1/2	3 1/4	1/4	2	15 1/2	15 1/2	3 1/4	1/4	2	153 1/4	96 3/4	255	37	10 1/4
Ace 125-5	4	1 1/4	1 1/4	1 1/4	V	10	1 3/4	10	1 1/4	45	1 1/2	F	18	18	4	1/4	2	18	18	4	1/4	2	159 1/4	99 3/4	261	37	10
American-LaFrance 1R	3	1 1/4	1 1/4	1 1/4	V	9	1 3/4	9	1 1/4	40 1/2	1 1/2	F	17	17	3 1/4	1/4	4	16	16	3 1/4	1/4	4	108	60	207 1/4	33	10
American-LaFrance 2R	3	1 1/4	1 1/4	1 1/4	V	9	1 3/4	9	1 1/4	40 1/2	1 1/2	F	17	17	3 1/4	1/4	4	17	17	3 1/4	1/4	4	132	81	242 1/4	33	10
American-LaFrance 2R	3	1 1/4	1 1/4	1 1/4	V	9	1 3/4	9	1 1/4	40 1/2	1 1/2	F	17	17	3 1/4	1/4	4	17	17	3 1/4	1/4	4	156	98	266 1/4	33	10
American-LaFrance 2R	3	1 1/4	1 1/4	1 1/4	V	9	1 3/4	9	1 1/4	40 1/2	1 1/2	F	17	17	3 1/4	1/4	4	17	17	3 1/4	1/4	4	180	110	290 1/4	33	10
American-LaFrance 2R	3	1 1/4	1 1/4	1 1/4	V	9	1 3/4	9	1 1/4	40 1/2	1 1/2	F	17	17	3 1/4	1/4	4	17	17	3 1/4	1/4	4	118 1/2	81	244 1/4	35 1/2	9
American-LaFrance 3R	3	1 1/4	1 1/4	1 1/4	V	11 1/2	1 3/4	11 1/2	1 1/4	42	2	F	21	21	4	1/4	4	21	21	4	1/4	4	144	90	268 1/4	35 1/2	9
American-LaFrance 3R	3	1 1/4	1 1/4	1 1/4	V	11 1/2	1 3/4	11 1/2	1 1/4	42	2	F	21	21	4	1/4	4	21	21	4	1/4	4	168	104	292 1/4	35 1/2	9
American-LaFrance 3R	3	1 1/4	1 1/4	1 1/4	V	11 1/2	1 3/4	11 1/2	1 1/4	42	2	F	21	21	4	1/4	4	21	21	4	1/4	4	192	114	292 1/4	35 1/2	9
American-LaFrance 3R	3	1 1/4	1 1/4	1 1/4	V	11 1/2	1 3/4	11 1/2	1 1/4	42	2	F	21	21	4	1/4	4	21	21	4	1/4	4	210	125	310 1/4	35 1/2	9
American-LaFrance 3R	3	1 1/4	1 1/4	1 1/4	V	11 1/2	1 3/4	11 1/2	1 1/4	42	2	F	21	21	4	1/4	4	21	21	4	1/4	4	104 1/4	71 3/4	227 1/4	35 1/2	9
American-LaFrance 3R	3	1 1/4	1 1/4	1 1/4	V	11 1/2	1 3/4	11 1/2	1 1/4	42	2	F	21	21	4	1/4	4	21	21	4	1/4	4	120 1/4	89 3/4	244 1/4	36	10
American-LaFrance 3R	3	1 1/4	1 1/4	1 1/4	V	11 1/2	1 3/4	11 1/2	1 1/4	42	2	F	21	21	4	1/4	4	21	21	4	1/4	4	144	90	268 1/4	36	10
American-LaFrance 5R	3	1 1/4	1 1/4	1 1/4	V	11 1/2	1 3/4	11 1/2	1 1/4	42	2	F	21	21	4	1/4	4	21	21	4	1/4	4	168	104	292 1/4	36	10
American-LaFrance 5R	3	1 1/4	1 1/4	1 1/4	V	11 1/2	1 3/4	11 1/2	1 1/4	42	2	F	21	21	4	1/4	4	21	21	4	1/4	4	192	114	292 1/4	36	10
American-LaFrance 5R	3	1 1/4	1 1/4	1 1/4	V	11 1/2	1 3/4	11 1/2	1 1/4	42	2	F	21	21	4	1/4	4	21	21	4	1/4	4	210	125	310 1/4	36	10
American-LaFrance 5R	3	1 1/4	1 1/4	1 1/4	V	11 1/2	1 3/4	11 1/2	1 1/4	42	2	F	21	21	4	1/4	4	21	21	4	1/4	4	104 1/4	71 3/4	227 1/4	36	10
American-LaFrance 5R	3	1 1/4	1 1/4	1 1/4	V	11 1/2	1 3/4	11 1/2	1 1/4	42	2	F	21	21	4	1/4	4	21	21	4	1/4	4	123	90	229 1/2	36	10
Armleder 21-1 1/2	4	1 1/4	1 1/4	1 1/4	V	12	1 3/4	16 1/2	1 1/4	31 1/2	2	F	11 1/2	11 1/2	3 1/4	1/4	4	11 1/2	11 1/2	3 1/4	1/4	4	Opt	Opt	Opt	32	9 1/4
Armleder 40B-1 1/2	4	1 1/4	1 1/4	1 1/4	V	10	1 3/4	11 1/2	1 1/4	34	2	F	11 1/2	11 1/2	3 1/4	1/4	4	11 1/2	11 1/2	3 1/4	1/4	4	Opt	Opt	Opt	32	9 1/4
Armleder 40C-1 1/2	3	1 1/4	1 1/4	1 1/4	V	12	1 3/4	11 1/2	1 1/4	34	2	F	37	37	3	1/4	1	15 1/2	15 1/2	3 1/4	1/4	8	Opt	Opt	Opt	36	10 1/2
Armleder KWB-3 1/2	4	1 1/4	1 1/4	1 1/4	V	10	1 3/4	16 1/2	1 1/4	35 3/4	2	F	37	37	3	1/4	1	15 1/2	15 1/2	3 1/4	1/4	8	Opt	Opt	Opt	36	10 1/2
Armleder KWB-3 1/2	4	1 1/4	1 1/4	1 1/4	V	10	1 3/4	16 1/2	1 1/4	35 3/4	2	F	37	37	3	1/4	1	15 1/2	15 1/2	3 1/4	1/4	8	Opt	Opt	Opt	36	10 1/2
Armleder HWC-2 1/2	3	1 1/4	1 1/4	1 1/4	V	10 1/4	1 3/4	16 1/2	1 1/4	33 3/4	2	F	13	13	3 1/4	1/4	4	13	13	3 1/4	1/4	4	Opt	Opt	Opt	32	10
Atterbury 20R-1 1/2	4	1 1/4	1 1/4	1 1/4	V	8	1 1/4	14	1 1/4	38 1/2	1 1/4	F	11 1/2	11 1/2	3 1/4	1/4	4	11 1/2	11 1/2	3 1/4	1/4	4	122 1/4	72 1/4	211 1/4	34	9 1/4
Atterbury 22C-2 1/2	4	1 1/4	1 1/4	1 1/4	V	10 1/4	1 3/4	16	1 1/4	40 1/2	1 1/2	F	15 1/2	15 1/2	3 1/4	1/4	4	15 1/2	15 1/2	3 1/4	1/4	4	129 1/4	78 1/4	225 1/4	34 1/2	9 1/4
Atterbury 22D-3 1/2	4	1 1/4	1 1/4	1 1/4	V	10 1/4	1 3/4	16	1 1/4	40 1/2	1 1/2	F	15 1/2	15 1/2	3 1/4	1/4	4	15 1/2	15 1/2	3 1/4	1/4	4	142 1/4	93 1/4	242	37 1/2	10 1/2
Atterbury SE-5	4	1 1/4	1 1/4	1 1/4	V	14	2	20 1/2	2	40	2	F	17 1/2	17 1/2	4	1/4	4	17 1/2	17 1/2	4	1/4	4	157 1/4	80 1/4	263	37 1/2	10 1/2
Autocar XXI-F-1 1/2	4	1 1/4	1 1/4	1 1/4	V	3-4	1 1/4	9 1/2	1 1/4	49 1/2	2	F	16 1/4	16 1/4	2 1/4	1/4	4	16 1/4	16 1/4	2 1/4	1/4	4	91	67	156	34	9 1/4
Autocar XXI-G-1 1/2	4	1 1/4	1 1/4	1 1/4	V	3-4	1 1/4	9 1/2	1 1/4	49 1/2	2	F	16 1/4	16 1/4	2 1/4	1/4	4	16 1/4	16 1/4	2 1/4	1/4	4	114	90	179	34	9 1/4
Autocar XXVI-4-6	3	1 1/4	1 1/4	1 1/4	V	3 1/2	1 1/4	3 1/2	1 1/4	49 1/2	2	F	20 1/4	20 1/4	2 1/4	1/4	4	20 1/4	20 1/4	2 1/4	1/4	4	140	80 1/4	223	34 1/2	10

Replacement Table—Continued

NAME, MODEL AND TONNAGE	ENGINE										BRAKE LINING								FRAME						
	Piston Rings		Carburetor		Upper Hose		Lower Hose		Fan Belt		Service				Emergency				Length		Width				
	No. per Cyl.	Width	Outlet Diameter	Inlet Diameter *	Vertical or Horizontal	Length	Width	Length	Width	Length	Width	Type	Length	Width	Thickness	No. of Pieces	Length	Width	Thickness	No. of Pieces	Back of Driver's Seat	Driver's Seat to Center of Rear Axle	Over All	Over All	Clearance at Lowest Point of Chassis
Clinton 1 1/4	4	1 1/2	1 1/2	1 1/2	H	7 1/2	1 1/2	14	1 1/2	33	1 1/2	F	10 7/8	2 1/2	1 1/2	4	10 7/8	2 1/2	1 1/2	4	112	73 1/2	207	34	10
Clinton 2	4	1 1/2	1 1/2	1 1/2	H	11	1 1/2	12	1 1/2	36	1 1/2	F	11 1/2	3 1/2	1 1/2	4	11 1/2	3 1/2	1 1/2	4	131	81	233	33 1/2	9
Clinton 3	4	1 1/2	1 1/2	1 1/2	H	11	1 1/2	19	1 1/2	38	1 1/2	F	13 1/2	3 1/2	1 1/2	4	13 1/2	3 1/2	1 1/2	4	166	102	270 1/2	33 1/2	9 1/2
Clinton 4	4	1 1/2	1 1/2	1 1/2	H	11	1 1/2	19	1 1/2	38	1 1/2	F	15 1/2	3 1/2	1 1/2	4	15 1/2	3 1/2	1 1/2	4	163	105	270 1/2	38	8 1/2
Clinton 5	4	1 1/2	1 1/2	1 1/2	H	12	1 1/2	18	1 1/2	41	1 1/2	F	18	4	1 1/2	4	18	4	1 1/2	4	206 1/2	115	318	38	8
Clinton 5-7	4	1 1/2	1 1/2	1 1/2	H	12	1 1/2	18	1 1/2	41	1 1/2	F	18	4	1 1/2	4	18	4	1 1/2	4	130 1/2	91	242	38	10
Clydesdale 120B-5-6	3	1 1/2	1 1/2	1 1/2	V	9	1 1/2	18 1/2	1 1/2	46 1/2	1 1/2	F	18	4	1 1/2	4	18	4	1 1/2	4	131	94	242	38	10
Clydesdale 90-3 1/2-4 1/2	3	1 1/2	1 1/2	1 1/2	V	9	1 1/2	14	1 1/2	42	1 1/2	F	16	3 1/2	1 1/2	4	16	3 1/2	1 1/2	4	143	94	242	38	10
Clydesdale 65EX 2 1/2-3	3	1 1/2	1 1/2	1 1/2	V	9	1 1/2	14	1 1/2	42	1 1/2	F	13 1/2	3 1/2	1 1/2	4	13 1/2	3 1/2	1 1/2	4	132	94	242	33 1/2	9 1/2
Clydesdale 65X-2 1/2-3	3	1 1/2	1 1/2	1 1/2	V	11	1 1/2	11	1 1/2	11	1 1/2	F	13 1/2	3 1/2	1 1/2	4	13 1/2	3 1/2	1 1/2	4	137	94	242	33 1/2	9 1/2
Clydesdale 42-1 1/2-2	3	1 1/2	1 1/2	1 1/2	V	15	1 1/2	12	1 1/2	41	1 1/2	F	12	3 1/2	1 1/2	4	12	3 1/2	1 1/2	4	117	94	242	34	10
Clydesdale 20-1-1 1/2	3	1 1/2	1 1/2	1 1/2	V	15	1 1/2	12	1 1/2	41	1 1/2	F	11 1/2	3 1/2	1 1/2	4	11 1/2	3 1/2	1 1/2	4	95	94	242	34	10
Clydesdale 18-1 1/2-1 1/2	3	1 1/2	1 1/2	1 1/2	V	15	1 1/2	12	1 1/2	41	1 1/2	F	11 1/2	3 1/2	1 1/2	4	11 1/2	3 1/2	1 1/2	4	95	94	242	34	10
Clydesdale 10-1 1/2-1 1/2	3	1 1/2	1 1/2	1 1/2	V	9	1 1/2	9	1 1/2	41	1 1/2	F	11 1/2	3 1/2	1 1/2	4	11 1/2	3 1/2	1 1/2	4	109	94	242	34	10
Clydesdale 10A-1 1/2-1 1/2	3	1 1/2	1 1/2	1 1/2	V	9	1 1/2	9	1 1/2	41	1 1/2	F	11 1/2	3 1/2	1 1/2	4	11 1/2	3 1/2	1 1/2	4	109	94	242	34	10
Columbia H-1 1/2	3	1 1/2	1 1/2	1 1/2	V	10	1 1/2	12	1 1/2	39	1 1/2	F	23	1 1/2	1 1/2	4	23	1 1/2	1 1/2	4	Opt	Opt	Opt	32 1/2	10
Columbia G-2 1/2	3	1 1/2	1 1/2	1 1/2	V	10	1 1/2	12	1 1/2	39	1 1/2	F	26	2	1 1/2	4	26	2	1 1/2	4	Opt	Opt	Opt	32 1/2	9
Columbia K-3	3	1 1/2	1 1/2	1 1/2	V	11	1 1/2	13	1 1/2	42	1 1/2	F	26	2	1 1/2	4	26	2	1 1/2	4	Opt	Opt	Opt	32 1/2	9
Commerce 9-1500	3	1 1/2	1 1/2	1 1/2	V	10	1 1/2	10	1 1/2	44	1 1/2	F	50	2	1 1/2	4	48 1/2	2	1 1/2	4	92 1/2	53 1/2	193	34	9
Commerce 14B-3000	4	1 1/2	1 1/2	1 1/2	V	10	1 1/2	9 1/2	1 1/2	39 1/2	1 1/2	F	11 1/2	3 1/2	1 1/2	4	11 1/2	3 1/2	1 1/2	4	117	75	210	34	8 1/2
Commerce 25B-5000	4	1 1/2	1 1/2	1 1/2	V	9 1/2	1 1/2	15 1/2	1 1/2	42	1 1/2	F	13	3 1/2	1 1/2	4	13	3 1/2	1 1/2	4	132	84	228 1/2	34	12 1/2
Concord E-1	4	1 1/2	1 1/2	1 1/2	H	7	1 1/2	9 1/2	1 1/2	33 1/2	1 1/2	F	12	3 1/2	1 1/2	4	12	3 1/2	1 1/2	4	32 1/2	32 1/2	242	32 1/2	10
Concord G-2	4	1 1/2	1 1/2	1 1/2	H	7	1 1/2	9 1/2	1 1/2	33 1/2	1 1/2	F	13 1/2	3 1/2	1 1/2	4	13 1/2	3 1/2	1 1/2	4	32 1/2	32 1/2	242	32 1/2	10
Concord H-2	4	1 1/2	1 1/2	1 1/2	H	7	1 1/2	9 1/2	1 1/2	33 1/2	1 1/2	F	12	3 1/2	1 1/2	4	12	3 1/2	1 1/2	4	32 1/2	32 1/2	242	32 1/2	10
Concord J-2 1/2	4	1 1/2	1 1/2	1 1/2	H	7	1 1/2	9 1/2	1 1/2	33 1/2	1 1/2	F	13 1/2	3 1/2	1 1/2	4	13 1/2	3 1/2	1 1/2	4	32 1/2	32 1/2	242	32 1/2	10
Concord JI-3	4	1 1/2	1 1/2	1 1/2	H	7	1 1/2	9 1/2	1 1/2	33 1/2	1 1/2	F	13 1/2	3 1/2	1 1/2	4	13 1/2	3 1/2	1 1/2	4	32 1/2	32 1/2	242	32 1/2	10
Corbitt S-1 1/2	3	1 1/2	1 1/2	1 1/2	H	8	1 1/2	14	1 1/2	38	1 1/2	F	16 1/2	1 1/2	1 1/2	4	16 1/2	1 1/2	1 1/2	4	103	59	196	68 1/2	11 1/2
Corbitt E-1	3	1 1/2	1 1/2	1 1/2	H	9	1 1/2	12	1 1/2	41	1 1/2	F	16 1/2	1 1/2	1 1/2	4	16 1/2	1 1/2	1 1/2	4	104	62	198	68 1/2	11 1/2
Corbitt D-1 1/2	3	1 1/2	1 1/2	1 1/2	H	11	1 1/2	15	1 1/2	46	1 1/2	F	18	2	1 1/2	4	18	2	1 1/2	4	110	72	206	68 1/2	10
Corbitt C-2	3	1 1/2	1 1/2	1 1/2	V	13	1 1/2	15	1 1/2	46	1 1/2	F	22 1/2	2 1/2	1 1/2	4	22 1/2	2 1/2	1 1/2	4	132	78	230	69	10 1/2
Corbitt B-2 1/2	3	1 1/2	1 1/2	1 1/2	V	13	1 1/2	15	1 1/2	46	1 1/2	F	22 1/2	2 1/2	1 1/2	4	22 1/2	2 1/2	1 1/2	4	136	78	232	69	10 1/2
Corbitt R-2 1/2-3	3	1 1/2	1 1/2	1 1/2	V	14	1 1/2	8	1 1/2	46	1 1/2	F	22 1/2	2 1/2	1 1/2	4	22 1/2	2 1/2	1 1/2	4	153	92	254	69	10 1/2
Corbitt A-3 1/2-4	3	1 1/2	1 1/2	1 1/2	V	14	1 1/2	8	1 1/2	46	1 1/2	F	21	4	1 1/2	4	21	3	1 1/2	4	168	106	266	86 1/2	9
Corbitt AA-5	3	1 1/2	1 1/2	1 1/2	V	13	1 1/2	14	1 1/2	36	1 1/2	F	68 1/2	3	1 1/2	2	68 1/2	3	1 1/2	2	168	106	268	86 1/2	10
Day-Elder AN-1 1/2	3	1 1/2	1 1/2	1 1/2	V	6 1/2	1 1/2	7	1 1/2	34 1/2	1 1/2	F	10 1/2	3	1 1/2	4	10 1/2	3	1 1/2	4	106 1/2	62 1/2	191	35	9
Day-Elder BN-2	3	1 1/2	1 1/2	1 1/2	V	4	1 1/2	12 1/2	1 1/2	41	1 1/2	F	11 1/2	3 1/2	1 1/2	4	11 1/2	3 1/2	1 1/2	4	118 1/2	78 1/2	202 1/2	35	9
Day-Elder DN-2 1/2	3	1 1/2	1 1/2	1 1/2	V	4	1 1/2	12 1/2	1 1/2	43	1 1/2	F	13 1/2	3 1/2	1 1/2	4	13 1/2	3 1/2	1 1/2	4	122 1/2	72 1/2	212 1/2	35	9
Day-Elder CN-3	3	1 1/2	1 1/2	1 1/2	V	10 1/2	1 1/2	12	1 1/2	37	1 1/2	F	13 1/2	3 1/2	1 1/2	4	13 1/2	3 1/2	1 1/2	4	123 1/2	77 1/2	216	35	9
Day-Elder FN-4	3	1 1/2	1 1/2	1 1/2	V	7 1/2	1 1/2	12 1/2	1 1/2	43	1 1/2	F	15 1/2	3 1/2	1 1/2	4	15 1/2	3 1/2	1 1/2	4	120 1/2	81 1/2	214 1/2	35	9
Day-Elder EN-5-6	4	1 1/2	1 1/2	1 1/2	V	12 1/2	1 1/2	...	1 1/2	38	1 1/2	F	17 1/2	4	1 1/2	4	17 1/2	4	1 1/2	4	154	94	253	37	9
Defiance G2-1 1/2	3	1 1/2	1 1/2	1 1/2	H	10	1 1/2	8	1 1/2	40	1 1/2	F	20	1 1/2	1 1/2	4	20	1 1/2	1 1/2	4	90	56	179 1/2	34	9
Defiance D-2-1 1/2	3	1 1/2	1 1/2	1 1/2	H	10	1 1/2	8	1 1/2	40	1 1/2	F	45	2 1/2	1 1/2	4	43	37	1 1/2	4	119 1/2	76 1/2	203	34	9
Defiance E2-2	3	1 1/2	1 1/2	1 1/2	H	10	1 1/2	8	1 1/2	40	1 1/2	F	52	2 1/2	1 1/2	4	3								

Replacement Table—Continued

NAME, MODEL AND TONNAGE	ENGINE										BRAKE LINING						FRAME								
	Piston Rings		Carburetor		Upper Hose		Lower Hose		Fan Belt		Service			Emergency			Length		Width						
	No. per Cyl.	Width	Outlet Diameter	Inlet Diameter	Vertical or Horizontal	Length	Width	Length	Width	Length	Width	Type	Length	Width	Thickness	No. of Pieces	Length	Width	Thickness	No. of Pieces	Back of Driver's Seat	Driver's Seat to Center of Rear Axle	Over All	Over All	Clearance at Lowest Point of Chassis
Garford 15-1.	4	1 1/4	1 1/4	1 1/4	V	11	2	14	1 1/4	34	1 1/4	1 1/4	11	2 1/4	1 1/4	4	11	2 1/4	1 1/4	4	96	61	187	34	11
Garford 25B-1 1/2.	4	1 1/4	1 1/4	1 1/4	V	11	2	14	1 1/4	34	1 1/4	1 1/4	11	2 1/4	1 1/4	4	11	2 1/4	1 1/4	4	108	70	200	34	9 1/2
Garford 70H-2 1/2.	4	1 1/4	1 1/4	1 1/4	V	11	2	14	1 1/4	34	1 1/4	1 1/4	11	2 1/4	1 1/4	4	13	3 1/4	1 1/4	4	121	74	214	34	9 1/2
Garford 80-4.	4	1 1/4	1 1/4	1 1/4	V	11	2	14	1 1/4	34	1 1/4	1 1/4	11	2 1/4	1 1/4	4	15	3 1/4	1 1/4	4	150	88 1/2	251	36	9 1/2
Garford 68D-5.	4	1 1/4	1 1/4	1 1/4	V	11	2	14	1 1/4	34	1 1/4	1 1/4	11	2 1/4	1 1/4	4	17	3 1/4	1 1/4	4	150	88 1/2	251	36	10
Garford 150-A-7 1/2.	4	1 1/4	1 1/4	1 1/4	V	11	2	14	1 1/4	34	1 1/4	1 1/4	11	2 1/4	1 1/4	4	17	3 1/4	1 1/4	4	150	88 1/2	251	36	11
Gary F-1-1 1/2.	3	1 1/4	1 1/4	1 1/4	V	11	2	14	1 1/4	34	1 1/4	1 1/4	11	2 1/4	1 1/4	4	11	3	1 1/4	4	97 3/4	57	183 1/2	34	11 1/2
Gary I-2.	4	1 1/4	1 1/4	1 1/4	V	13 1/2	12	12	1 1/4	32	1 1/4	1 1/4	12	3 1/4	1 1/4	4	12	3 1/4	1 1/4	4	120	72	214	34	10 1/2
Gary J-2 1/2.	4	1 1/4	1 1/4	1 1/4	V	10	12	12	1 1/4	36	1 1/4	1 1/4	13	3 1/4	1 1/4	4	13	3 1/4	1 1/4	4	120	76	214	34	10
Gary K-3 1/2.	4	1 1/4	1 1/4	1 1/4	V	13	16	12	1 1/4	36	1 1/4	1 1/4	15 1/2	3 1/4	1 1/4	4	15 1/2	3 1/4	1 1/4	4	148	86	247	36 1/2	10 1/2
Gary M-5.	4	1 1/4	1 1/4	1 1/4	V	14	18	11	1 1/4	32	1 1/4	1 1/4	18 1/2	3 1/4	1 1/4	4	18 1/2	3 1/4	1 1/4	4	168	99	275	39	10 1/4
G.M.C. K-16.	4	1 1/4	1 1/4	1 1/4	V	8 1/4	1 1/4	8 1/4	1 1/4	33 1/2	1 1/4	1 1/4	4	2 1/4	1 1/4	1	47	2 1/4	1 1/4	1	89	57	183 1/2	34	8 3/4
G.M.C. K-41.	4	1 1/4	1 1/4	1 1/4	V	10	1 1/4	9 1/4	1 1/4	35 1/4	1 1/4	1 1/4	13	3 1/4	1 1/4	2	13	3 1/4	1 1/4	2	Opt	Opt	Opt	33	9 1/2
G.M.C. K-71.	4	1 1/4	1 1/4	1 1/4	V	11 1/4	1 1/4	9 1/4	1 1/4	35 1/4	1 1/4	1 1/4	15 1/2	3 1/4	1 1/4	2	15 1/2	3 1/4	1 1/4	2	Opt	Opt	Opt	38	10 1/4
G.M.C. K-101.	4	1 1/4	1 1/4	1 1/4	V	11 1/4	1 1/4	9 1/4	1 1/4	35 1/4	1 1/4	1 1/4	17 1/2	3 1/4	1 1/4	2	17 1/2	3 1/4	1 1/4	2	Opt	Opt	Opt	38	9 1/4
Gotfredson 20-1.	4	1 1/4	1 1/4	1 1/4	V	9 1/4	1 1/4	10 1/4	1 1/4	32 1/2	1 1/4	1 1/4	12	3 1/4	1 1/4	4	11 1/2	2 1/4	1 1/4	4	88	56 1/2	182 1/2	32	11 1/2
Gotfredson 40-1 1/2-2.	4	1 1/4	1 1/4	1 1/4	V	9 1/4	1 1/4	13 1/4	1 1/4	41	1 1/4	1 1/4	12	3 1/4	1 1/4	4	12	3 1/4	1 1/4	4	120	69 1/2	214 1/2	32 1/2	12
Gotfredson 50-2 1/2.	4	1 1/4	1 1/4	1 1/4	V	11	16 1/4	16 1/4	1 1/4	41	1 1/4	1 1/4	13 1/2	3 1/4	1 1/4	4	13 1/2	3 1/4	1 1/4	4	127	81	222	33	9 1/2
Gotfredson 80-4.	4	1 1/4	1 1/4	1 1/4	V	14	2	18	1 1/4	43	2	2	15 1/4	3 1/4	1 1/4	4	15 1/4	3 1/4	1 1/4	4	157	89 3/4	247 3/4	35	9 3/4
Gotfredson 100-5.	4	1 1/4	1 1/4	1 1/4	V	2	2	19	1 1/4	42	2	2	18	4	1 1/4	4	18	4	1 1/4	4	155 1/4	89 3/4	261 1/4	38	9 1/2
Graham Bros.	3	1 1/4	1 1/4	1 1/4	V	9	1 1/4	7 1/4	1 1/4	34	1 1/4	1 1/4	50	2 1/4	1 1/4	2	20	2 1/4	1 1/4	1	98	58	194	33 1/2	10 1/4
Gramm-Pioneer 10 Speed-1.	3	1 1/4	1 1/4	1 1/4	V	12	14 1/2	14 1/2	1 1/4	29 1/2	1 1/4	1 1/4	48	2	1 1/4	2	26	2	1 1/4	1	97	54	180	30 1/2	.....
Gramm-Pioneer 15-1 1/2-2.	3	1 1/4	1 1/4	1 1/4	V	10 1/4	6	6	2	39	1 1/4	1 1/4	49 1/2	2	1 1/4	2	45 1/2	1 1/4	1 1/4	2	120	74	205 1/2	32	.....
Gramm-Pioneer 65-1 1/2-2.	3	1 1/4	1 1/4	1 1/4	V	10 1/4	6	6	2	39	1 1/4	1 1/4	48 1/2	1 1/4	1 1/4	4	19 1/4	1 1/4	1 1/4	4	120	74	205 1/2	32	.....
Gramm-Pioneer 125-2 1/2.	3	1 1/4	1 1/4	1 1/4	V	4 1/2	1 1/4	12	1 1/4	32	2	2	5	5	2	2	45	2	2	4	126	77 1/4	214	32	.....
Gramm-Pioneer 30-3.	3	1 1/4	1 1/4	1 1/4	V	11	1 1/4	9	1 1/4	33	2	2	22	2 1/4	1 1/4	4	22 1/4	2 1/4	1 1/4	4	129 3/4	81 1/4	226	36	.....
Gramm-Pioneer 75P-3 1/4.	3	1 1/4	1 1/4	1 1/4	V	11	1 1/4	9	1 1/4	33 1/4	2	2	22	2 1/4	1 1/4	4	22 1/4	2 1/4	1 1/4	4	129 3/4	81 1/4	226	36	.....
Gramm-Pioneer 40-4.	3	1 1/4	1 1/4	1 1/4	V	11	1 1/4	9	1 1/4	33 1/4	2	2	22	2 1/4	1 1/4	4	22 1/4	2 1/4	1 1/4	4	144	87 1/4	240 1/4	36	.....
Gramm-Pioneer 50-5-6.	3	1 1/4	1 1/4	1 1/4	V	23 1/4	2	13 1/4	1 1/4	40 1/4	2	2	32	2 1/4	1 1/4	4	32 1/4	2 1/4	1 1/4	4	132	97	263 1/4	36	.....
Gray N-1 1/2.	3	1 1/4	1 1/4	1 1/4	H	9	2 1/4	2 1/4	1 1/4	34 3/4	1 1/4	1 1/4	27	1 1/4	1 1/4	2	19 1/2	1 1/4	1 1/4	1	.....	.....	112 1/4	35	9
Gray T-1.	3	1 1/4	1 1/4	1 1/4	H	9	2 1/4	2 1/4	1 1/4	34 3/4	1 1/4	1 1/4	27	1 1/4	1 1/4	2	19 1/2	1 1/4	1 1/4	1	.....	.....	152 1/4	32	9
G. W. W. Super.	3	1 1/4	1 1/4	1 1/4	V	8	1 1/4	17 1/2	1 1/4	37 1/2	1 1/4	1 1/4	40	2 1/4	1 1/4	2	47	1 1/4	1 1/4	2	89	72	192	32	11 1/4
Harvey WOA-2.	4	1 1/4	1 1/4	2	V	11	2	14	1 1/4	35 1/4	2	2	45	2 1/4	1 1/4	2	45	2 1/4	1 1/4	2	139	87	242 1/4	32	10
Harvey WFB-2 1/2.	4	1 1/4	1 1/4	2	V	11	2	14	1 1/4	35 1/4	2	2	50	2 1/4	1 1/4	2	50	2 1/4	1 1/4	2	139	87	242 1/4	32	10
Harvey WHB-3 1/2.	4	1 1/4	1 1/4	2	V	11	2	14	1 1/4	35 1/4	2	2	20 1/4	4	1 1/4	4	20 1/4	3	1 1/4	4	151 1/4	85 1/4	258 1/4	35	9
Harvey WFT-6.	4	1 1/4	1 1/4	2	V	11	2	14	1 1/4	36 1/2	2	2	50	4	1 1/4	4	50	2	1 1/4	2	84	52	189 1/4	32	10
Harvey WHT-10.	4	1 1/4	1 1/4	2	V	11	2	14	1 1/4	36 1/2	2	2	20 1/4	4	1 1/4	4	20 1/4	3	1 1/4	4	86	52 1/4	191 1/4	35	9
Hawkeye O.	4	1 1/4	1 1/4	1	V	12	2	9	1 1/4	36 1/2	1 1/4	1 1/4	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Hawkeye K.	4	1 1/4	1 1/4	1	V	12	2	9	1 1/4	36 1/2	1 1/4	1 1/4	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Hawkeye M.	4	1 1/4	1 1/4	1 1/4	V	12	2 1/4	9	1 1/4	36 1/2	2	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Hawkeye N.	4	1 1/4	1 1/4	1 1/4	V	12	2 1/4	12	1 1/4	36 1/2	2	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Hug T.	4	1 1/4	1 1/4	1 1/4	V	12	1 1/4	13	1 1/4	36 1/2	1 1/4	1 1/4	48	2 1/4	1 1/4	2	22	2 1/4	1 1/4	2	Opt	Opt	Opt	35 1/4	.....
Hurlburt A1 1/2-2.	3	1 1/4	1 1/4	1	V	.....	.....	.....	.....	.....	.....	.....	22	2 1/4	1 1/4	2	22	2 1/4	1 1/4	2	132	132	.....	35 1/4	.....
Hurlburt B2 1/2.	3	1 1/4	1 1/4	1	V	.....	.....	.....	.....	.....	.....	.....	24												

Replacement Table—Continued

NAME, MODEL AND TONNAGE	ENGINE											BRAKE LINING								FRAME					
	Piston Rings		Carburetor			Upper Hose		Lower Hose		Fan Belt		Type	Service		Emergency				Length			Width			
	No. per Cyl.	Width	Outlet Diameter	Inlet Diameter	Vertical or Horizontal	Length	Width	Length	Width	Length	Width		Length	Width	Thickness	No. of Pieces	Length	Width	Thickness	No. of Pieces	Back of Driver's Seat	Driver's Seat to Center of Rear Axle	Over All	Over All	Clearance at Lowest Point of Chassis
Krebs J-24.....	4	1 1/4	1 1/4	1 1/4	V	8	1 1/4	17	1 1/4	42	1 1/4	F	11 1/4	2 1/4	1 1/4	4	11 1/4	2 1/4	1 1/4	4	119	64	214	33	10 1/4
Krebs K-45.....	4	1 1/4	1 1/4	1 1/4	V	10	1 1/4	17	1 1/4	42	1 1/4	F	12	2 1/4	1 1/4	4	12	2 1/4	1 1/4	4	122	60	222	33	10 1/4
Krebs L-75.....	4	1 1/4	1 1/4	1 1/4	V	11	1 1/4	17	1 1/4	44	1 1/4	F	13 1/2	2 1/4	1 1/4	4	13 1/2	2 1/4	1 1/4	4	131	80	234	33 1/4	9 1/4
Krebs L-110.....	4	1 1/4	1 1/4	1 1/4	V	11	1 1/4	17	1 1/4	44	1 1/4	F	16	3 3/4	1 1/4	4	16	3 3/4	1 1/4	4	131	87	234	38	10 1/4
Krebs B-120.....	4	1 1/4	1 1/4	1 1/4	V	11	1 1/4	17	1 1/4	44	1 1/4	F	16	3 3/4	1 1/4	4	16	3 3/4	1 1/4	4	125 1/2	92 1/2	234	38	10 1/4
Lange F.....	4	1 1/4	1 1/4	1 1/4	V	5	1 1/4	15 1/2	1 1/4	45	1 1/4	F	11 1/2	3 3/4	1 1/4	4	11 1/2	3 3/4	1 1/4	4	139	88	227 1/2	37	9 1/4
Lange E-2 1/2.....	4	1 1/4	1 1/4	1 1/4	V	9	1 1/4	15 1/2	1 1/4	42	1 1/4	F	13 3/4	3 3/4	1 1/4	4	13 3/4	3 3/4	1 1/4	4	139	85	229	33	10 1/4
Larrabee X2-1-1 1/4 Ton.....	3	1 1/4	1 1/4	1 1/4	V	6	1 1/4	14 1/2	1 1/4	34	1 1/4	F	50	2 1/4	1 1/4	2	50	2 1/4	1 1/4	2	108	59	205	34	11 1/4
Larrabee J4-1 1/4-2 1/4 Ton.....	4	1 1/4	1 1/4	1 1/4	V	6 1/2	1 1/4	10	1 1/4	41	1 1/4	F	19	2 1/4	1 1/4	4	19	2 1/4	1 1/4	4	108	67 1/2	199	34	10 1/4
Larrabee K5-2 1/4-3 1/4 Ton.....	4	1 1/4	1 1/4	1 1/4	V	6 1/2	1 1/4	11	1 1/4	45 1/2	1 1/4	F	21	2 1/4	1 1/4	4	21	2 1/4	1 1/4	4	Opt	Opt	Opt	34	9 1/4
Larrabee L4-3 1/4-4 1/4 Ton.....	4	1 1/4	1 1/4	1 1/4	V	6 1/2	1 1/4	11	1 1/4	45 1/2	1 1/4	F	21	2 1/4	1 1/4	4	21	2 1/4	1 1/4	4	Opt	Opt	Opt	36	9 1/4
Larrabee W-5-7.....	4	1 1/4	1 1/4	1 1/4	V	8 1/2	1 1/4	17 1/2	2	44 1/2	2	F	72	3	1 1/4	2	72	3	1 1/4	2	152	Opt	Opt	36	9 1/4
Maccar EX.....	3	1 1/4	1 1/4	1 1/4	V	4 1/2	1 1/4	15	1 1/4	35 1/2	1 1/4	F	50	2	1 1/4	2	48	2	1 1/4	2	101 1/2	68	192 1/2	37	9 1/4
Maccar L-1, 1 1/4.....	4	1 1/4	1 1/4	1 1/4	V	4 1/2	1 1/4	19	1 1/4	35	1 1/4	F	11 1/4	3 3/4	1 1/4	4	11 1/4	3 3/4	1 1/4	4	125 1/4	74 1/4	228 1/4	34	10 1/4
Maccar H-1, 3.....	4	1 1/4	1 1/4	1 1/4	V	4 1/2	1 1/4	19	1 1/4	37 1/2	2	F	13 1/4	3 3/4	1 1/4	4	13 1/4	3 3/4	1 1/4	4	139 1/4	79 1/4	243 1/4	34	10 1/4
Maccar M-2, 4.....	4	1 1/4	1 1/4	1 1/4	V	4 1/2	1 1/4	19	1 1/4	37 1/2	2	F	14 1/4	3 3/4	1 1/4	4	14 1/4	3 3/4	1 1/4	4	153 1/4	91 1/4	257 1/4	34	8 1/4
Maccar G-1, 5.....	4	1 1/4	1 1/4	1 1/4	V	8	1 1/4	16 1/2	1 1/4	40 1/2	2	F	18	4	1 1/4	4	18	4	1 1/4	4	163 1/4	99 1/4	278	37 1/2	10 1/4
Maccar HT.....	4	1 1/4	1 1/4	1 1/4	V	4 1/2	1 1/4	19	1 1/4	35	2	F	13 1/4	3 3/4	1 1/4	4	13 1/4	3 3/4	1 1/4	4	139 1/4	79 1/4	243 1/4	34	10 1/4
Mack AB-1 1/4, 2, 2 1/4-T-Ch.....	3	1 1/4	1 1/4	1 1/4	V	7 1/2	1 1/4	5 1/2	1 1/4	36 1/2	1 1/4	F	11 1/4	4	1 1/4	2	16 1/2	2 1/4	1 1/4	2	Opt	Opt	Opt	33 1/4	9 1/4
Mack Dual R'd'n-1 1/4, 2, 2 1/4.....	3	1 1/4	1 1/4	1 1/4	V	7 1/2	1 1/4	5 1/2	1 1/4	36 1/2	1 1/4	F	11 1/4	4	1 1/4	2	16 1/2	2 1/4	1 1/4	2	Opt	Opt	Opt	33 1/4	9 1/4
Mack AB-Tractor-5.....	3	1 1/4	1 1/4	1 1/4	V	7 1/2	1 1/4	5 1/2	1 1/4	36 1/2	1 1/4	F	11 1/4	4	1 1/4	2	16 1/2	2 1/4	1 1/4	2	Opt	Opt	Opt	33 1/4	9 1/4
Mack AC-3 1/4, 5, 6 1/2, 7 1/2.....	3	1 1/4	1 1/4	1 1/4	V	5	1 1/4	3 1/4	2	36	1 1/4	F	16 1/2	3	1 1/4	4	20 1/2	2 1/4	1 1/4	4	Opt	Opt	Opt	37 1/2	9 1/4
Mack AC-Trac-7, 10, 13, 15.....	3	1 1/4	1 1/4	1 1/4	V	5	1 1/4	3 1/4	2	36	1 1/4	F	16 1/2	3	1 1/4	4	20 1/2	2 1/4	1 1/4	4	Opt	Opt	Opt	37 1/2	9 1/4
Mason Road King.....	3	1 1/4	1 1/4	1 1/4	V	11 1/4	2	14 1/2	1 1/4	30 1/2	1 1/4	F	42 1/2	2 1/4	1 1/4	1	40 1/2	2 1/4	1 1/4	1	85	56 1/2	175	30	10 1/4
Master 22-1 1/4.....	4	1 1/4	1 1/4	1 1/4	V	13 1/2	2	12 1/2	1 1/4	31	1 1/4	F	12	3 1/4	1 1/4	2	12	3 1/4	1 1/4	2	Opt	Opt	Opt	34 1/2	9 1/4
Master 41-2 1/4.....	4	1 1/4	1 1/4	1 1/4	V	13 1/2	2	12 1/2	1 1/4	31	1 1/4	F	13 1/4	3 1/4	1 1/4	2	13 1/4	3 1/4	1 1/4	2	117 1/2	Opt	Opt	34 1/2	9 1/4
Master 51-3 1/4.....	4	1 1/4	1 1/4	1 1/4	V	13 1/2	2	15	1 1/4	35	2	F	16	3 1/4	1 1/4	2	16	3 1/4	1 1/4	2	147 1/2	Opt	Opt	36 1/2	9 1/4
Master 61-5.....	4	1 1/4	1 1/4	1 1/4	V	13 1/2	2	15	1 1/4	35	2	F	13 1/4	4	1 1/4	2	18	4	1 1/4	2	162 1/2	Opt	Opt	36 1/2	9 1/4
Master 64-5-6.....	4	1 1/4	1 1/4	1 1/4	V	13 1/2	2	15	1 1/4	37	2	F	13 1/4	4	1 1/4	2	18	4	1 1/4	2	162 1/2	Opt	Opt	39	9 1/4
Maxwell 1 1/4.....	3	1 1/4	1 1/4	1 1/4	V	7 1/2	1 1/4	3 1/4	2	36 1/2	1 1/4	F	31	3	1 1/4	4	24 1/2	2	1 1/4	1	102	Opt	Opt	36	9 1/4
Menominee Hurryton-1.....	3	1 1/4	1 1/4	1 1/4	V	6	1 1/4	12	1 1/4	40	1 1/4	F	11	3	1 1/4	4	11	3	1 1/4	4	102 1/4	197	33	10 1/4	9 1/4
Menominee H-1 1/4.....	3	1 1/4	1 1/4	1 1/4	V	6	1 1/4	12	1 1/4	40	1 1/4	F	11	3	1 1/4	4	11	3	1 1/4	4	122	216	32	10 1/4	9 1/4
Menominee D-2.....	3	1 1/4	1 1/4	1 1/4	V	3	1 1/4	3	1 1/4	37 1/2	2	F	13 1/4	3 1/4	1 1/4	2	42 1/2	2 1/4	1 1/4	2	146	224	32	10 1/4	9 1/4
Menominee HT-1 1/4.....	3	1 1/4	1 1/4	1 1/4	V	9 1/4	1 1/4	10 1/2	1 1/4	33 1/2	1 1/4	F	47 1/2	2 1/4	1 1/4	2	33 1/4	2 1/4	1 1/4	2	102 1/4	192	32	10 1/4	9 1/4
Menominee J-3, 5.....	3	1 1/4	1 1/4	1 1/4	V	3	1 1/4	3	1 1/4	40 1/2	2	F	69 1/2	3 1/4	1 1/4	2	52	2 1/4	1 1/4	2	149	246	38	9	9 1/4
Menominee G-3 1/4.....	3	1 1/4	1 1/4	1 1/4	V	3	1 1/4	3	1 1/4	37 1/2	2	F	15 1/4	3 1/4	1 1/4	4	15 1/4	3 1/4	1 1/4	4	149	246	36	9	9 1/4
Moreland RR-1.....	3	1 1/4	1 1/4	1 1/4	V	8	1 1/4	11 1/4	1 1/4	34	1 1/4	F	49	2 1/4	1 1/4	2	46	2 1/4	1 1/4	2	108	56 1/2	208 1/2	34	9 1/4
Moreland BX-1 1/4.....	3	1 1/4	1 1/4	1 1/4	V	8	1 1/4	11 1/4	1 1/4	34	1 1/4	F	12	3 1/4	1 1/4	4	12	3 1/4	1 1/4	4	108	56 1/2	208 1/2	34	9 1/4
Moreland EX-2.....	3	1 1/4	1 1/4	1 1/4	V	9	1 1/4	14	1 1/4	42	1 1/4	F	12	3 1/4	1 1/4	4	12	3 1/4	1 1/4	4	132	79 1/2	226 1/2	34	9 1/4
Moreland AX-3.....	3	1 1/4	1 1/4	1 1/4	V	9	1 1/4	13	1 1/4	42	1 1/4	F	13 1/4	3 1/4	1 1/4	4	13 1/4	3 1/4	1 1/4	4	174	101 1/2	253 1/2	34	9 1/4
Moreland RX-5.....	4	1 1/4	1 1/4	1 1/4	V	8	1 1/4	14 1/2	1 1/4	42	2	F	15 1/2	3 1/4	1 1/4	4	15 1/2	3 1/4	1 1/4	4	192	115 1/2	271	38	9 1/4
Moreland RC-Bus.....	3	1 1/4	1 1/4	1 1/4	H	8	1 1/4	11 1/4	1 1/4	34	1 1/4	F	49	2 1/4	1 1/4	2	46	2 1/4	1 1/4	2	156	100	256	34	

Replacement Table—Continued

NAME, MODEL AND TONNAGE	ENGINE										BRAKE LINING								FRAME						
	Piston Rings		Carburetor			Upper Hose		Lower Hose		Fan Belt		Service				Emergency				Length		Width			
	No. per Cyl.	Width	Outlet Diameter	Inlet Diameter	Vertical or Horizontal	Length	Width	Length	Width	Length	Width	Type	Length	Width	Thickness	No. of Pieces	Length	Width	Thickness	No. of Pieces	Back of Driver's Seat	Driver's Seat to Center of Rear Axle	Over All	Over All	Clearance at Lowest Point of Chassis
Perfection A.	3	3	1	1	V	9	2	6	2	43	10	V	10	2	1/4	4	10	2	1/4	4	95	67	175	32	10 1/2
Perfection B.	3	3	1	1	V	9	2	6	2	43	10	V	10	2	1/4	4	10	2	1/4	4	104	76	184	32	10 1/2
Perfection C.	3	3	1	1	V	9	2	6	2	43	10	V	10	2	1/4	4	10	2	1/4	4	104	76	184	32	10 1/2
Perfection D.	3	3	1	1	V	9	2	6	2	43	10	V	10	2	1/4	4	10	2	1/4	4	104	76	184	32	10 1/2
Perfection E.	3	3	1	1	V	9	2	6	2	43	10	V	10	2	1/4	4	10	2	1/4	4	104	76	184	32	10 1/2
Perfection EA.	3	3	1	1	V	9	2	6	2	43	10	V	10	2	1/4	4	10	2	1/4	4	104	76	184	32	10 1/2
Pierce Arrow XA-2.	3	3	1	1	V	9	2	6	2	43	10	V	10	2	1/4	4	10	2	1/4	4	104	76	184	32	10 1/2
Pierce Arrow XB-3.	3	3	1	1	V	9	2	6	2	43	10	V	10	2	1/4	4	10	2	1/4	4	104	76	184	32	10 1/2
Pierce Arrow WC-4.	3	3	1	1	V	9	2	6	2	43	10	V	10	2	1/4	4	10	2	1/4	4	104	76	184	32	10 1/2
Pierce Arrow WD-5.	3	3	1	1	V	9	2	6	2	43	10	V	10	2	1/4	4	10	2	1/4	4	104	76	184	32	10 1/2
Pierce Arrow RE-6.	3	3	1	1	V	9	2	6	2	43	10	V	10	2	1/4	4	10	2	1/4	4	104	76	184	32	10 1/2
Pierce Arrow RF-7.	3	3	1	1	V	9	2	6	2	43	10	V	10	2	1/4	4	10	2	1/4	4	104	76	184	32	10 1/2
Pierce Arrow XB-TT.	3	3	1	1	V	9	2	6	2	43	10	V	10	2	1/4	4	10	2	1/4	4	104	76	184	32	10 1/2
Pierce Arrow WD-TT.	3	3	1	1	V	9	2	6	2	43	10	V	10	2	1/4	4	10	2	1/4	4	104	76	184	32	10 1/2
Pierce Arrow RF-TT.	3	3	1	1	V	9	2	6	2	43	10	V	10	2	1/4	4	10	2	1/4	4	104	76	184	32	10 1/2
Pioneer 50AA-1.	3	3	1	1	V	9	2	6	2	43	10	V	10	2	1/4	4	10	2	1/4	4	104	76	184	32	10 1/2
Pittsburgher A 1 1/2-2.	3	3	1	1	V	9	2	6	2	43	10	V	10	2	1/4	4	10	2	1/4	4	104	76	184	32	10 1/2
Pittsburgher C 2 1/2-3.	3	3	1	1	V	9	2	6	2	43	10	V	10	2	1/4	4	10	2	1/4	4	104	76	184	32	10 1/2
Pittsburgher D 3 1/2.	3	3	1	1	V	9	2	6	2	43	10	V	10	2	1/4	4	10	2	1/4	4	104	76	184	32	10 1/2
Power F-2 1/2.	3	3	1	1	V	9	2	6	2	43	10	V	10	2	1/4	4	10	2	1/4	4	104	76	184	32	10 1/2
Power C-3 1/2.	3	3	1	1	V	9	2	6	2	43	10	V	10	2	1/4	4	10	2	1/4	4	104	76	184	32	10 1/2
Rainier R31-1/4.	3	3	1	1	V	9	2	6	2	43	10	V	10	2	1/4	4	10	2	1/4	4	86	50	181	34	11 1/2
Rainier R-29.	3	3	1	1	V	9	2	6	2	43	10	V	10	2	1/4	4	10	2	1/4	4	86	50	181	34	11 1/2
Rainier R36-1 1/4.	3	3	1	1	V	9	2	6	2	43	10	V	10	2	1/4	4	10	2	1/4	4	86	50	181	34	11 1/2
Rainier R28-2 1/2-3.	3	3	1	1	V	9	2	6	2	43	10	V	10	2	1/4	4	10	2	1/4	4	86	50	181	34	11 1/2
Rainier R20-2 1/2-3.	3	3	1	1	V	9	2	6	2	43	10	V	10	2	1/4	4	10	2	1/4	4	86	50	181	34	11 1/2
Rainier R25-3 1/2-6.	3	3	1	1	V	9	2	6	2	43	10	V	10	2	1/4	4	10	2	1/4	4	86	50	181	34	11 1/2
Rainier R27-6.	3	3	1	1	V	9	2	6	2	43	10	V	10	2	1/4	4	10	2	1/4	4	86	50	181	34	11 1/2
Reo F-2500 lbs.	3	3	1	1	V	9	2	6	2	43	10	V	10	2	1/4	4	10	2	1/4	4	86	50	181	34	11 1/2
Reynolds 23A-2.	3	3	1	1	V	9	2	6	2	43	10	V	10	2	1/4	4	10	2	1/4	4	86	50	181	34	11 1/2
Reynolds 23B-3.	3	3	1	1	V	9	2	6	2	43	10	V	10	2	1/4	4	10	2	1/4	4	86	50	181	34	11 1/2
Reynolds 23C-25 pas. Bus.	3	3	1	1	V	9	2	6	2	43	10	V	10	2	1/4	4	10	2	1/4	4	86	50	181	34	11 1/2
Rowe CDW-2.	3	3	1	1	V	9	2	6	2	43	10	V	10	2	1/4	4	10	2	1/4	4	86	50	181	34	11 1/2
Rowe CDW-2 1/2.	3	3	1	1	V	9	2	6	2	43	10	V	10	2	1/4	4	10	2	1/4	4	86	50	181	34	11 1/2
Rowe GSW-3.	3	3	1	1	V	9	2	6	2	43	10	V	10	2	1/4	4	10	2	1/4	4	86	50	181	34	11 1/2
Rowe HW-4.	3	3	1	1	V	9	2	6	2	43	10	V	10	2	1/4	4	10	2	1/4	4	86	50	181	34	11 1/2
Rowe FW-5.	3	3	1	1	V	9	2	6	2	43	10	V	10	2	1/4	4	10	2	1/4	4	86	50	181	34	11 1/2
Ruggles 15-1/4.	3	3	1	1	V	9	2	6	2	43	10	V	10	2	1/4	4	10	2	1/4	4	86	50	181	34	11 1/2
Ruggles 20R-1 1/4.	3	3	1	1	V	9	2	6	2	43	10	V	10	2	1/4	4	10	2	1/4	4	86	50	181	34	11 1/2
Ruggles 20AR-1 1/4.	3	3	1	1	V	9	2	6	2	43	10	V	10	2	1/4	4	10	2	1/4	4	86	50	181	34	11 1/2
Ruggles 40-2.	3	3	1	1	V	9	2	6	2	43	10	V	10	2	1/4	4	10	2	1/4	4	86	50	181	34	11 1/2
Ruggles 40H-2 1/4.	3	3	1	1	V	9	2	6	2	43	10	V	10	2	1/4	4	10	2	1/4	4	86	50	181	34	11 1/2
Sandow G-1.	3	3	1	1	H	9	2	7	2	38	22	V	22	2	1/4	4	22	2	1/4	4	96	205	34	10 1/2	
Sandow C-G-1 1/4.	3	3	1	1	H	9	2	7	2	38	22	V	22	2	1/4	4	22	2	1/4	4	96	205	34	10 1/2	
Sandow J-2 1/4.	3	3	1	1	H	9	2	7	2	38	22	V	22	2	1/4	4	22	2	1/4	4	96	205	34	10 1/2	
Sandow M-3 1/4.	3	3	1	1	H	9	2	7	2	38	22	V	22	2	1/4	4	22	2	1/4	4	96	205	34	10 1/2	
Sandow L-5.	3	3	1	1	H	9	2	7	2	38	22	V	22	2	1/4	4	22	2	1/4	4	96	205	34	10 1/2	
Sandow W15-1 1/4.	3	3	1	1	H	9	2	7	2	38	22	V	22	2	1/4	4	22	2	1/4	4	96	205	34	10 1/2	
Sandow 25-2 1/2.	3	3	1	1	H	9	2	7	2	38	22	V	22	2	1/4	4	22	2	1/4	4	96	205	34	10 1/2	
Sandow 35-3 1/2.	3	3	1	1	H	9	2	7	2	38	22	V	22	2	1/4	4	22	2	1/4	4	96	205	34	10 1/2	
Sandow 50-5.	3	3	1	1	H	9	2	7	2	38	22	V	22	2	1/4	4	22	2	1/4	4	96	205	34	10 1/2	
Schacht F-2.	3	3	1	1	H	9	2	7	2	38	22	V	22	2	1/4	4	22	2	1/4	4	96	205	34	10 1/2	
Schacht F-3.	3	3	1	1	H	9	2	7	2	38	22	V	22	2	1/4	4	22	2	1/4	4	96	205	34	10 1/2	
Schacht E-4.	3	3	1	1	H	9	2	7	2	38	22	V	22	2	1/4	4	22	2	1/4	4	96	205	34	10 1/2	
Schacht E-5.	3	3	1	1	H	9	2	7	2	38	22	V	22	2	1/4	4	22	2	1/4	4</					

Replacement Table—Continued

NAME, MODEL AND TONNAGE	ENGINE										BRAKE LINING				FRAME										
	Piston Rings		Carburetor		Upper Hose		Lower Hose		Fan Belt		Service		Emergency		Length		Width								
	No. per Cyl.	Width	Outlet Diameter	Inlet Diameter	Vertical or Horizontal	Length	Width	Length	Width	Length	Width	Type	Length	Width	Thickness	No. of Pieces	Length	Width	Thickness	No. of Pieces	Back of Driver's Seat	Driver's Seat to Center of Rear Axle	Over All	Over All	Clearance at Lowest Point of Chassis
Super Truck 50.....	3	3/4	1 1/4	1 1/4	V	18 1/2	1 1/4	19	1 1/4	37 1/2	1 1/4	F	51 1/2	2 1/4	3/4	2	51 1/2	1 1/4	3/4	2	135	84	243	36	9 1/4
Super Truck 70.....	3	3/4	1 1/4	1 1/4	V	18 1/2	1 1/4	19	1 1/4	37 1/2	1 1/4	F	55 1/2	2 1/4	3/4	2	55 1/2	1 1/4	3/4	2	144	97 7/8	249	34	10 1/4
Super Truck 100.....	3	3/4	1 1/4	1 1/4	V	6	1 1/4	19	1 1/4	42	1 1/4	F	68	2 1/4	3/4	2	51 1/2	1 1/4	3/4	2	144	97 7/8	249	34	10 1/4
Traffic C-4000.....	3	3/4	1 1/4	1 1/4	V	10 1/2	2	10 1/2	2	41 1/4	1 1/4	F	43 1/2	2 1/4	3/4	2	38	1 1/4	3/4	2	120 3/4	67 3/4	213 3/4	42	10 1/4
Traffic 6000.....	3	3/4	1 1/4	1 1/4	V	10 1/2	2	10 1/2	2	41 1/4	1 1/4	F	52 1/2	2 1/4	3/4	2	47	1 1/4	3/4	2	120 3/4	69 3/4	213 3/4	34	11 1/4
Traffic Speedboy.....	3	3/4	1 1/4	1 1/4	V	10 1/2	2	10 1/2	2	41 1/4	1 1/4	F	43 1/2	2 1/4	3/4	2	38	1 1/4	3/4	2	86	53 1/4	174	34	11 1/4
Transport 15-1.....	3	3/4	1 1/4	1 1/4	V	10 1/2	2	13	2	40 3/4	1 1/4	F	48 1/2	2 1/4	3/4	2	46 1/2	1 1/4	3/4	2	98 1/4	57 1/4	188	34	10
Transport 26-1 1/2.....	4	4	1 1/4	1 1/4	V	9 1/4	1 1/4	13	1 1/4	34 1/2	1 1/4	F	48 1/2	2 1/4	3/4	2	46 1/2	1 1/4	3/4	2	113 1/4	70 1/4	201	34	10
Transport 36-2.....	4	4	1 1/4	1 1/4	V	10 1/2	2	16	1 1/4	33 1/2	1 1/4	F	10 1/4	2 1/4	3/4	2	46 1/2	1 1/4	3/4	2	120 1/4	72 1/4	210	34	11
Transport 61-3 1/2.....	4	4	1 1/4	1 1/4	V	9 1/4	1 1/4	16	1 1/4	33 1/2	1 1/4	F	11 1/4	2 1/4	3/4	2	48 1/2	2 1/4	3/4	2	127 1/4	78 1/4	218	34	11
Transport 75-5.....	4	4	1 1/4	1 1/4	V	12	2	16	1 1/4	35 1/2	1 1/4	F	11 1/4	2 1/4	3/4	2	58	2 1/4	3/4	2	150 1/4	93 1/4	251 1/4	36 1/2	10 1/4
Transport 55-3.....	3	3/4	1 1/4	1 1/4	V	9	1 1/4	16	1 1/4	31 1/2	1 1/4	F	11 1/4	2 1/4	3/4	2	48 1/2	2 1/4	3/4	2	123 1/4	78 1/4	213 1/4	34	11
Traylor B.....	4	4	1 1/4	1 1/4	V	10	2	6	1 1/4	38 1/2	1 1/4	F	50	2 1/4	3/4	2	50	2 1/4	3/4	2	117	75	204 1/4	34	10
Traylor C.....	4	4	1 1/4	1 1/4	V	12	2	12	1 1/4	36 1/2	1 1/4	F	50	2 1/4	3/4	2	50	2 1/4	3/4	2	122	73 1/4	218 1/4	34	10 1/4
Traylor D.....	4	4	1 1/4	1 1/4	V	12	2	12	1 1/4	36 1/2	1 1/4	F	56 1/2	2 1/4	3/4	2	56 1/2	2 1/4	3/4	2	142	76	241 1/4	34	9 1/4
Traylor E.....	4	4	1 1/4	1 1/4	V	14	2	14	1 1/4	37 1/2	1 1/4	F	59	2 1/4	3/4	2	59	2 1/4	3/4	2	165	92 1/4	273 1/4	35	11
Triangle AA-1.....	3	3/4	1 1/4	1 1/4	H	17	2	17	2	34	1 1/4	F	22 1/2	1 1/4	3/4	2	48	2 1/4	3/4	2	94	53	177	35	10
Triangle A-1 1/2.....	4	4	1 1/4	1 1/4	V	14	1 1/4	14 1/2	1 1/4	39 1/4	1 1/4	F	7 1/2	4	3/4	2	49	2 1/4	3/4	2	126	77 1/4	225	34	12
Triangle B 2 1/2.....	3	3/4	1 1/4	1 1/4	V	9	1 1/4	18	1 1/4	39 1/4	1 1/4	F	7 1/2	4	3/4	2	52	3	3/4	2	132	84 1/2	217 1/4	34	9
Triangle C-2.....	3	3/4	1 1/4	1 1/4	V	14	1 1/4	14 1/2	1 1/4	39 1/4	1 1/4	F	7 1/2	4	3/4	2	52	3	3/4	2	129	81	219 1/4	34	12
Ultimate A-2.....	4	4	1 1/4	1 1/4	V	11	2	8	1 1/4	34	2	F	17	4 1/2	3/4	2	17	4 1/2	3/4	2	126	.....	.....	32 1/4	.....
Ultimate AJ2.....	4	4	1 1/4	1 1/4	V	11	2	8	1 1/4	34	2	F	17	4 1/2	3/4	2	17	4 1/2	3/4	2	126	.....	.....	32 1/4	.....
Ultimate AJL-2.....	4	4	1 1/4	1 1/4	V	12	2	8	1 1/4	34	2	F	17	4 1/2	3/4	2	17	4 1/2	3/4	2	150	.....	.....	32 1/4	.....
Ultimate AJXL.....	4	4	1 1/4	1 1/4	V	11	2	8	1 1/4	34	2	F	17	4 1/2	3/4	2	17	4 1/2	3/4	2	144	.....	.....	32 1/4	.....
Ultimate BL3.....	4	4	1 1/4	1 1/4	V	11	2	8	1 1/4	34	2	F	17	4 1/2	3/4	2	17	4 1/2	3/4	2	192	.....	.....	32 1/4	.....
Ultimate D-5.....	4	4	1 1/4	1 1/4	V	11	2	8	1 1/4	34	2	F	51	2 1/4	3/4	2	51	2 1/4	3/4	2	180	.....	.....	32 1/4	.....
Union FW-2 1/2.....	3	3/4	1 1/4	1 1/4	V	20	1 1/4	19 1/2	1 1/4	37 3/4	2	F	26	4 1/2	3/4	1	52	3	3/4	1	133 1/2	77 3/4	224	32	11 1/4
Union H-4.....	3	3/4	1 1/4	1 1/4	V	20	1 1/4	19 1/2	1 1/4	37 3/4	2	F	26 3/4	4 1/2	3/4	1	32	4 1/2	3/4	1	157 1/2	98	264	34	13 1/4
Union HW-4.....	3	3/4	1 1/4	1 1/4	V	20	1 1/4	19 1/2	1 1/4	37 3/4	2	F	26	4 1/2	3/4	1	24	4	3/4	2	157 1/2	98	264	34	13 1/4
United H Spec.....	4	4	1 1/4	1 1/4	V	16	2	19	2	32	1 1/4	F	49	2 1/4	3/4	2	49	2 1/4	3/4	2	.....	.....	.....	.....	.....
United 30, 35, 50.....	3	3/4	1 1/4	1 1/4	H	7	7	13	1 1/4	34	1 1/2	F	49	2 1/4	3/4	2	49	2 1/4	3/4	2	.....	.....	.....	.....	.....
United C.....	4	4	1 1/4	1 1/4	H	2 1/2	7	2 1/2	1 1/4	37 1/2	2	F	62	3	3/4	1	58	2 1/4	3/4	1	120	.....	.....	33	.....
United 1 1/2.....	4	4	1 1/4	1 1/4	H	15	2	16	1 1/4	37 1/2	2	F	48	3	3/4	1	48	2 1/4	3/4	1	Opt	.....	.....	33	.....
United 2 1/2.....	4	4	1 1/4	1 1/4	H	7	7	12	1 1/4	37 1/2	2	F	49	3	3/4	1	48	2 1/4	3/4	1	Opt	.....	.....	34	.....
United 3 1/2.....	4	4	1 1/4	1 1/4	H	7	7	12	1 1/4	37 1/2	2	F	62	3	3/4	1	58	2 1/4	3/4	1	Opt	.....	.....	34	.....
U.S.U.-1 1/2.....	4	4	1 1/4	1 1/4	V	11 1/2	2	11 1/2	1 1/4	33	1 1/4	F	50 1/2	2 1/4	3/4	2	20	1 1/4	3/4	2	108	70	195	32	9 1/4
U.S.N.-1 1/2.....	3	3/4	1 1/4	1 1/4	V	11 1/2	2	11 1/2	1 1/4	33	1 1/4	F	50 1/2	2 1/4	3/4	2	20	1 1/4	3/4	2	120	82	211	34	11
U.S.N.W.-23-1 1/2-2.....	4	4	1 1/4	1 1/4	V	10 1/4	1 1/4	11 1/4	1 1/4	33	1 1/4	F	21	2 1/4	3/4	2	21	2 1/4	3/4	2	120	82	211	34	11
U.S.R.-2 1/2-3.....	3	3/4	1 1/4	1 1/4	V	10	1 1/4	10	1 1/4	35	1 1/4	F	21	2 1/4	3/4	2	21	2 1/4	3/4	2	144	94	241	34	9 1/4
U.S.S.-3 1/2-4.....	3	3/4	1 1/4	1 1/4	V	9	1 1/4	8	1 1/4	37	1 1/4	F	21	2 1/4	3/4	2	21	2 1/4	3/4	2	156	104	258	36	9
U.S.T.-5-7.....	4	4	1 1/4	1 1/4	V	15	2	13	1 1/4	38 1/2	2	F	62	3	3/4	2	33	3	3/4	1	168	103	278	36	10 1/4
U.S.S.Spec. 4-5.....	3	3/4	1 1/4	1 1/4	V	9	1 1/4	8	1 1/4	37	1 1/4	F	21	2 1/4	3/4	2	21	2 1/4	3/4	2	156	.....	.....	36	.....
Wachusett S-1.....	3	3/4	1 1/4	1 1/4	V	9 1/2	1 1/4	11	1 1/4	31 1/2	1 1/4	F	11 1/4	2 1/4	3/4	2	11 1/4	2 1/4	3/4	2	212	115	74	33	.....
Wachusett J-1 1/2.....	4	4	1 1/4	1 1/4	V	10	1 1/4	10 1/2	1 1/4	36	1 1/4	F	11 1/4	3	3/4	2	11 1/4	3	3/4	2	212	121	76	33	.....
Wachusett K2.....	4	4	1 1/4	1 1/4	V	11	1 1/4	11	1 1/4	40 1/2	1 1/4	F	13 1/2	3 1/2											

KEY OF ABBREVIATIONS

Note: Numerals on This Page Correspond With Numerals at Head of Specification Columns on Page Following. In All Specifications—O, Own; Op or Opt, Optional

Engine:

Beav—Beaver
Buda
Cont—Continental
GBS—Golden, Belnap &
Gr-B—Gray-Beal [Swartz
Her—Hercules
Hin—Hinkley
H-Sp—Herschell-Spillman
Lib—Liberty
LMF—Light Mfg. & Fdy.
Lyco—Lycoming
Mid—Midwest
Sup—Supreme
Wau—Waukesha
Wei—Weidely
Wis—Wisconsin
Yellow—Yellow

Valve Arrangement:

D—Head & Side
H—Overhead
L—ELL-Head
S—Sleeve
T—TEE-Head

Radiator (Make):

BW—B & W
Bre—Bremer
Brm—Brenem
Bus—Bush
Can—Candler
Cor—Corcoran
Chic—Chicago
Eag—Eagle
EM—English-Mersick
Eur—Eureka
Fed—Fedders
Flex—Flexo
GO—G. & O.
Har—Harrison
Hoo—Hooven
Idl—Ideal
Jam—Jamestown
Kue—Kuenz
Liv—Livingston
Lng—Long
McC—McCord
McK—McKinnon Dash
May—Mayo
Mod—Modine
Per—Perfex
R-T—Rome-Turney
SJ—Shotwell Johnson
Spar—Sparton
Spec—Special
Spli—Splitex
Stn—Standard
U.S.—U. S. Cartridge
Whe—Wheeler

Lubrication:

FS—Force and Splash
F—Force Feed
S—Splash

Carburetor:

Bent—Bennett
Bris—Briscoe Devices
Cart—Carter
Eag—Eagle
Ens—Ensign
Hol—Holly
John—Johnson
King—Kingston
Mar—Marvel
Mas—Master
Mill—Miller
Rayf—Rayfield
Scoe—Scoe
Strm—Stromberg
Sheb—Schebler
Stew—Stewart
Till—Tillotson
Zen—Zenith

Fuel Feed:

6 G—Gravity
P—Pressure
V—Vacuum

Governor:

7 Con—Continental
Dup—Duplex
Han—Handy
Her—Hercules
Hin—Hinkley
McC—McCanna
Mon—Monarch
Phar—Pharo
Pier—Pierce
Sim—Simplex
Wau—Waukesha

Ignition System:

8 Apo—Apollo
AtK—Atwater Kent
AuL—Auto-Lite
Ber—Berling
Bos—Bosch
Con—Connecticut
Del—Delco
Eis—Eisemann
Kin—Kingston
KW—K. W. Ignition Co.
Lor—Lorraine
NE—North East
POL—Prest-O-Lite
Rm—Remy
RBo—Robert Bosch
Sim—Simms
Spl—Splitdorf
Tea—Teagle
Wag—Wagner
Wes—Westinghouse

Engine Starter:

9 AC—Allis-Chalmers
AtK—Atwater-Kent
AuL—Auto-Lite
Bj—Bijur
Bos—Bosch
Del—Delco
Dy—Dyneto
GD—Gray & Davis
LN—Leece-Neville
NE—North East
Rm—Remy
Sim—Simms
USL—U. S. L.
Wes—Westinghouse
Wg—Wagner

Clutch (Make):

10 B.B.—Borg & Beck
B-Li—Brown-Lipe
Covt—Covert
Det—Detlaff
DG—Detroit Gear & Mach.
Dod—Dodge
Full—Fuller
Hart—Hartford
Hoos—Hoosier
HS—Hele-Shaw
M-E—Merchant & Evans
Mun—Muncie
T-D—Twin Disc
W-Gr—Warner Gear

Gearset:

11 B-Li—Brown-Lipe
Cott—Cotta
Covt—Covert
Det—Detroit
Dod—Dodge
Dun—Dundore
Durs—Durstion
Full—Fuller

G-Le—Grant Lees

MM—Mechanics Mach. Co.
Mun—Muncie
W-C—Warner Corporation
W-Gr—Warner Gear

Location of Gearset:

12 A—Amidships
J—Unit with jackshaft
R—Rear
U—Unit with engine

Universal:

13 Acm—Acme
Arv—Arvac
Bld—Blood-Brothers
Det—Detroit
Hart—Hartford
MM—Mechanics
M-E—Merchant & Evans
Nor—Norwalk
Pet—Cleveland Universal
Pick—Pick
Sned—Snead
Spic—Spicer
Ster—Sterling
Ther—Thermoid
UM—Universal Machine
UP—Universal Products
Var—Varied

Springs:

14 Am—Am. Auto Parts
Arm—Armstrong
Bea—Beans
Bet—Betts
Cham—Champion
Del—Delany
Det—Detroit
GC—Garden City
Har—Harvey
IC—Iron City
Kal—Kalamazoo
Lah—Laher
Lig—Liggett
Mar—Maremont
Math—Mather
Mer—Merrill
Nat—National
Pen—Penn
Per—Perfection
P.S.—Point Spring Co.
Row—Rowland
Shel—Sheldon
SP—Spring Perch
Stan—Stan-Par
SS—Standard Steel
Ster—Sterling
Tut—Tuthill
US—United States
Vul—Jenkins Vulcan

Front Axle:

15 Col—Columbia
Cont—Continental
Dod—Dodge
Eat—Eaton
Fli—Flint
Sals—Salisbury
Sav—Savage
Shel—Sheldon
Shul—Shuler
Tim—Timken
Torb—Torbensen
Vul—Vulcan

Final Drive:

16 B—Bevel Gear
C—Chain
I—Internal Gear
P—Spur
R—Double Reduction
S—Spiral Bevel
W—Worm

Rear Axle (Make):

17 Col—Columbia
Clark
Dun—Dunkirk
Eat—Eaton
Fli—Flint
Huck—Huck
IrM—Iron Mt.
LM—L M Axle
Russ—Russel
Sals—Salisbury
Shel—Sheldon
Stn—Standard Parts
Thom—Thomson
Tim—Timken
Torb—Torbensen
Vul—Vulcan
Walk—Walker
Wis—Wisconsin

Rear Axle (Type):

18 F—Floating
D—Dead
½—Semi-Floating
¾—¾-Floating

Steering Gear:

19 CAS—C. A. S. Products Co.
Dit—Ditwiler
Dod—Dodge
Gem—Gemmer
Hin—Keystone Hindley
Jac—Jacox
Lav—Lavine
M-P—Muncie Products
Ros—Ross
Sag—Saginaw Products Co.
Woh—Wohlrab

Wheels:

20 Arc—Archibald
AuW—Auto Wheel
Bim—Bimel
Bet—Bethlehem
Bud—Budd
Cla—Clark
C&M—Crane & McMahon
Day—Dayton
Det—Detroit
Dis—Disteel
E&O—Eberly & Oris
Hay—Hayes
Hoo—Hoopes Brothers
Imp—Imperial
Ind—Indestructible
Jon—Jones
Kel—Kelsey
MM—Michigan Malleable
Iron Co.
Mot—Motor Wheel
Mun—Muncie Wheel
Mut—Mutual
Nor—Northern
Pru—Prudden
Roy—Royer
Sch—Schwartz
Smi—Smith
Sta—Stanwell
StM—St. Mary
Stn—Standard
Van—Van Wheel
Wal—Walker
Way—Wayne
W-L—Waterhouse & Lester

Rim Equipment:

21 Bak—Baker
Cle—Cleveland
Det—Detroit
Fir—Firestone
Gdy—Goodyear
Hay—Hayes
Jac—Jackson
Jax—Jaxon
Kel—Kelsey
Mil—Miller

Commercial Car Specifications—Corrected Monthly

The Specifications, Chassis Prices, Etc., Are Corrected Each Month From Data Supplied Direct by the Makers. Gasoline Tractor-Trucks Will be Found at the End of Gasoline Commercial Cars

See Preceding Table for Replacement Data. Truck Frame Dimensions Are Included in Same Table

(Where prices are not given it is because we have been unable to get them from authoritative sources)

For full name and address of manufacturer and information regarding complete line see page 68

* This symbol in the wheelbase column indicates that more than one wheelbase is furnished

TRADE NAME AND MODEL	Chassis Price	ENGINE DETAILS										GEARSET		FRONT AXLE		REAR AXLE		Tires, Wheels, Rims		Chassis Weight (Stripped)													
		Make and Model Number 4 cylinder unless otherwise noted.	Bore and Stroke	N.A.C.C.	Horsepower	Valve Arrangement	Radiator (Make)	Lubrication	Carburetor	Fuel Feed	Governor (Make)	Ignition System	Engine Starter	Clutch (Make)	Make and Model Number	Location	Speeds	Universal (Make)	Springs (Make)		Model Number	Type	Total Gear Reduction in High	Total Gear Reduction in Low	Steering Gear (Make)	Tires, Wheels, Rims							
																										Front	Rear	Wheels (Make)	Rim Equipment				
																														*Pneumatic †Dual ‡Solid			
1000 Pounds																																	
Chevrolet, Sup. LD.	395	Own	3 1/2 x 4	21.7	L	Har	FS	Zen	G	G	...	Rm	Own	Own	...	U	U	U	SS	Det	Tim O-100	Tim 0500	1 1/2	3.77	12.52	M-P	30 x 3 1/2	30 x 3 1/2	30 x 3 1/2	Hay	Jax	1390 103	
Gray	420	Own	3 1/2 x 4	21	L	Cor	S	Scoc	G	G	...	Wes	Own	Own	...	U	U	U	MM	Det	Tim O-100	Tim 0500	1 1/2	3.9	13.19	Ovn	30 x 3 1/2	30 x 3 1/2	30 x 3 1/2	Kel	Kel	1130 100	
Overland.	395	Own	3 1/2 x 4	19.6	L	Own	FS	Till	G	G	...	AuL	B.B.	B.B.	...	U	U	U	Own	Own	Tim 0500	Tim 0500	1 1/2	4.5	17.68	Ovn	30 x 3 1/2	30 x 3 1/2	30 x 3 1/2	Hay	Hay	1650 100	
1500 Pounds																																	
American-LaFrance 1R	...	Own	4 1/2 x 5	28.9	L	Bus	F	Strm	G	G	...	Spl	Wes	Own	Own	A	U	U	Mer	Am	Own	Own	S	4.5	20.1	Own	33 x 5	33 x 5	33 x 5	...	...	...	139 1/2
Commerce 9.	...	Cont N	3 1/2 x 5	22.5	L	Ovn	FS	Zen	V	V	...	Bos	Bj	DG	...	U	U	U	U	Am	Shel 33FA500	Sals W1002	...	6.73	18.33	Jac	33 x 5	33 x 5	33 x 5	...	...	...	3100 127
Corbett S Speed Truck.	...	H-Sp 30	3 1/2 x 5	19.8	L	Own	FS	Strm	V	V	...	Bos	Dy	R-Li	...	U	U	U	U	U	Shel 33FA500	Sals W1002	...	6	20	Ros	34 x 4 1/2	34 x 4 1/2	34 x 4 1/2	...	...	...	3420 130
Diamond T-75.	...	Her OX	4 x 5	25.6	L	McC	FS	Stew	G	G	...	App	NE	Ovn	...	U	U	U	Spic	Math	Own	Own	B	5.12	18.58	Gem	33 x 5	33 x 5	33 x 5	...	...	...	2825 130
Dodge Brothers.	730	Own	3 1/2 x 4 1/2	24	L	Own	FS	Zen	G	G	...	Phar	Bos	Ovn	...	U	U	U	Spic	Math	Own	Own	B	4.54	18.9	Ovn	32 x 4	32 x 4	32 x 4	...	...	...	116
King Zeiter.	1650	Cont N	3 1/2 x 5	22.5	L	Own	FS	Zen	V	V	...	Bos	Rm	B.B.	...	U	U	U	Spic	Math	Own	Own	B	4.9	20.04	Gem	33 x 5	33 x 5	33 x 5	...	...	...	2900 124
Perfection A.	1245	Cont N	3 1/2 x 5	19.6	L	Own	FS	Zen	V	V	...	Bos	Rm	B.B.	...	U	U	U	Spic	Math	Own	Own	B	5	22.3	Lav	32 x 4 1/2	32 x 4 1/2	32 x 4 1/2	...	...	...	2500 128
Rainier R-31.	1970	Cont N	3 1/2 x 5	22.5	L	Own	FS	Zen	G	G	...	Bos	Rm	B.B.	...	U	U	U	Spic	Math	Own	Own	B	5	22.3	Lav	32 x 4 1/2	32 x 4 1/2	32 x 4 1/2	...	...	...	2500 125
Ruggles 15.	2400	H-Sp 30	3 1/2 x 5	19.6	L	Per	FS	Zen	G	G	...	Bos	Bos	M-E	...	U	U	U	Spic	Math	Own	Own	B	5.81	19.7	Jac	32 x 4 1/2	32 x 4 1/2	32 x 4 1/2	...	...	...	2300 122
White 15.	1580	Own GK	3 1/2 x 5	22.5	L	Lng	FS	Zen	G	G	...	Bos	...	B-Li	...	U	U	U	Spic	Math	Own	Own	B	5.36	18.6	Ovn	34 x 5	34 x 5	34 x 5	...	...	...	3225 133 1/2
Yellow Cab. M-22-1/4.	...	Cont V-4	3 1/2 x 5	22.5	L	Lng	FS	Zen	G	G	...	Bos	...	B-Li	...	U	U	U	Spic	Math	Own	Own	B	4.9	16.31	Gem	33 x 4 1/2	33 x 4 1/2	33 x 4 1/2	...	...	...	2400 117
1 Ton																																	
Ame 20	2200	Cont N	3 1/2 x 5	22.5	L	GO	FS	Strm	V	V	...	Dup	Eis	B.B.	...	U	U	U	Det	Del	Tim 1250	Tim 6250	1 1/2	6.75	27	Ros	34 x 5	34 x 5	34 x 5	...	...	...	3050 129
Autocar F.	2300	Own 2	4 1/2 x 4 1/2	18	L	Own	S	Strm	G	G	...	...	...	Own	...	U	U	U	Spic	Del	Own	Own	W	8.3	33.2	Ros	34 x 4	34 x 4	34 x 4	...	...	...	3800 97
Belmont B.	1525	Buda MU	3 1/2 x 5	21	L	R-T	FS	Zen	G	G	...	...	...	Own	...	U	U	U	Spic	Del	Own	Own	W	8.3	33.2	Ros	34 x 4	34 x 4	34 x 4	...	...	...	3800 120
Bessmer G.	1450	Cont N	3 1/2 x 5	19.6	L	Stn	FS	Strm	G	G	...	...	...	Full	...	U	U	U	Spic	Math	Shel 350	Torb A	...	5.42	16.25	Lav	32 x 5	32 x 5	32 x 5	...	...	...	2000 113
Bethlehem KN.	1385	Own	3 1/2 x 5	19.6	L	GO	FS	Zen	G	G	...	...	...	Full	...	U	U	U	Spic	Math	Shel 350	Torb A	...	5.42	16.25	Lav	32 x 5	32 x 5	32 x 5	...	...	...	3000 123
Beta J-3	1850	Own	3 1/2 x 5	19.6	L	Chic	GO	F	Zen	V	...	...	...	Full	...	U	U	U	Spic	Math	Shel 350	Torb A	...	6.86	18.8	Ros	32 x 5	32 x 5	32 x 5	...	...	...	2650 125
Brookway E-2	1785	Wia WTU	3 1/2 x 5	22.4	L	GO	FS	Zen	G	G	...	...	...	Full	...	U	U	U	M-E	Row	Tim 1250	Tim 6250	1 1/2	5.13	20.5	Gem	33 x 5	33 x 5	33 x 5	...	...	...	3150 140
Casco Model A.	495	Own	3 1/2 x 5	22.4	L	GO	FS	Zen	G	G	...	...	...	Full	...	U	U	U	Spic	Stan	Col 5045	Col 52000	1 1/2	5.85	23.46	Woh	33 x 5	33 x 5	33 x 5	...	...	...	3100 130
Chevrolet Sup. Util. Exp.	1695	Buda GBU	3 1/2 x 5	22.4	L	Har	FS	Zen	G	G	...	...	...	Full	...	U	U	U	Own	SS	Col 5045	Col 52000	1 1/2	5.42	18	M-P	34 x 5	34 x 5	34 x 5	...	...	...	2840 125
Chorod E.	1765	Own	3 1/2 x 5	21.7	L	Har	FS	Zen	G	G	...	...	...	Full	...	U	U	U	Own	SS	Col 5045	Col 52000	1 1/2	5.42	18	M-P	34 x 5	34 x 5	34 x 5	...	...	...	3500 135
Dahl A.	1695	Cont N	3 1/2 x 5	19.6	L	Own	FS	Zen	G	G	...	...	...	Full	...	U	U	U	KB	Mar	Tim 1452	Tim 6250	1 1/2	5.3	22	Ros	34 x 5	34 x 5	34 x 5	...	...	...	3500 135
D-Oit A-1.	2490	Own	3 1/2 x 5	22.5	L	Mod	FS	Strm	V	V	...	...	...	Full	...	U	U	U	SP	Tim 1452	Tim 6250	Tim 6250	1 1/2	6.75	22	Ros	34 x 4 1/2	34 x 4 1/2	34 x 4 1/2	...	...	...	2400 118
Dorria K-2	1695	Own	3 1/2 x 5	22.5	L	Mod	FS	Strm	V	V	...	...	...	Full	...	U	U	U	SP	Tim 1452	Tim 6250	Tim 6250	1 1/2	6.75	22	Ros	34 x 4 1/2	34 x 4 1/2	34 x 4 1/2	...	...	...	3400 136
Duplex D.	380	Buda WTU	3 1/2 x 5	22.5	L	Own	FS	Zen	G	G	...	...	...	Full	...	U	U	U	Pet	Pen	Tim 1250	Tim 6250	1 1/2	5.5	22	Woh	33 x 5	33 x 5	33 x 5	...	...	...	3000 132
Federal T.	1495	Own	3 1/2 x 5	22.5	L	Own	FS	Zen	G	G	...	...	...	Full	...	U	U	U	Own	Own	Tim 1250	Tim 6250	1 1/2	5.6	18.7	Gem	33 x 5	33 x 5	33 x 5	...	...	...	2950 132
Fulton A.	1590	Buda WTU	3 1/2 x 5	22.5	L	Own	FS	Zen	G	G	...	...	...	Full	...	U	U	U	Own	Own	Tim 1250	Tim 6250	1 1/2	6.1	19.9	Ovn	30 x 3 1/2	32 x 4 1/2	32 x 4 1/2	...	...	...	3500 130
Garford 15.	1875	Buda MU	3 1/2 x 5	22.5	L	Own	FS	Strm	G	G	...	...	...	Full	...	U	U	U	Spic	Per	Own	Own	W	6.5	...	Gem	34 x 5	34 x 5	34 x 5	...	...	...	3500 132
Gary W.	1695	Own	3 1/2 x 5	22.5	L	Own	FS	Strm	G	G	...	...	...	Full	...	U	U	U	Spic	Per	Own	Own	W	8.25	24.75	Ros	36 x 3 1/2	36 x 3 1/2	36 x 3 1/2	...	...	...	3400 130
G.M.C. K-16.	1875	Buda WTU	3 1/2 x 5	22.5	L	Own	FS	Strm	G	G	...	...	...	Full	...	U	U	U	Spic	Per	Own	Own	W	8.25	24.75	Ros	36 x 3 1/2	36 x 3 1/2	36 x 3 1/2	...	...	...	3400 130
Graham Brothers BA.	1265	Dodge	3 1/2 x 4 1/2	24	L	Own	FS	Stew	V	V	...	...	...	Full	...	U	U	U	UP	Det	Tim 1250	Tim 6250	1 1/2	6.28	29.29	Dod	33 x 4 1/2	34 x 5	34 x 5	...	...	...	2835 131
Gramm-Pioneer 10-SpT	1365	Lycio CT	3 1/2 x 5	22.5	L	Own	FS	Strm	G	G	...	...	...	Full	...	U	U	U	UP	Det	Tim 1250	Tim 6250	1 1/2	6.28	29.29	Dod	33 x 4 1/2	34 x 5	34 x 5	...	...	...	2370 129
Grass-Premier 40.	1475	Own	3 1/2 x 5	22.5	L	Own	FS	Strm	G	G	...	...	...	Full	...	U	U	U	UP	Det	Tim 1250	Tim 6250	1 1/2	6.28	29.29	Dod	33 x 4 1/2	34 x 5	34 x 5	...	...	...	2600 122
Gray.	575	Own	3 1/2 x 5	22.5	L	Own	FS	Strm	G	G	...	...	...	Full	...	U	U	U	UP	Det	Tim 1250	Tim 6250	1 1/2	6.28	29.29	Dod	33 x 4 1/2	34 x 5	34 x 5	...	...	...	3260 136
Hay.	1650	Buda WTU	3 1/2 x 5	22.5	L	Own	FS	Strm	G	G	...	...	...	Full	...	U	U	U	UP	Det	Tim 1250	Tim 6250	1 1/2	6.28	29.29	Dod	33 x 4 1/2	34 x 5	34 x 5	...	...	...	3260 136
Hay.	1650	Buda WTU	3 1/2 x 5	22.5	L	Own	FS	Strm	G	G	...	...	...	Full	...	U	U	U	UP	Det	Tim 1250	Tim 6250	1 1/2	6.28	29.29	Dod	33 x 4 1/2	34 x 5	34 x 5	...	...	...	3260 136
Independent J (Lows).	1665	Buda WTU	3 1/2 x 5	22.5	L	Own	FS	Strm	G	G	...	...	...	Full	...	U	U	U	UP	Det	Tim 1250	Tim 6250	1 1/2	6.28	29.29	Dod	33 x 4 1/2	34 x 5	34 x 5	...	...	...	3260 136
Indiana Highway Exp.	...	Wau BUX	3 1/2 x 5	22.5	L	Own	FS	Strm	G	G	...	...	...	Full	...	U	U	U	UP	Det	Tim 1250	Tim 6250	1 1/2	6.28	29.29	Dod	33 x 4 1/2	34 x 5	34 x 5	...	...	...	3260 136
Int'l Speed Truck S.	...	Wau BUX	3 1/2 x 5	22.5	L	Own	FS	Strm	G	G	...	...	...	Full	...	U	U	U	UP	Det	Tim 1250	Tim 6250	1 1/2	6.28	29.29	Dod	33 x 4 1/2	34 x 5	34 x 5	...	...	...	3260 136
International 21.	1150	H-S 7000	3 1/2 x 5	19.6	L	Own	FS	Strm	G	G	...	...	...	Full	...	U	U	U	UP	Det	Tim 1250	Tim 6250	1 1/2	6.28	29.29	Dod	33 x 4 1/2	34 x 5	34 x 5	...	...	...	3260 136
Kearna H.	1160	Own	3 1/2 x 5	19.6	L	Own	FS	Strm	G	G	...	...	...	Full	...	U	U	U	UP	Det	Tim 1250	Tim 6250	1 1/2	6.28	29.29	Dod	33 x 4 1/2	34 x 5	34 x 5	...	...	...	3260 136
King Zeiter.	1950	Cont N	3 1/2 x 5	22.5	L	Own	FS	Strm	G	G	Full	...	U	U	U	UP	Det	Tim 1250	Tim 6250	1 1/2	6.28	29.29	Dod	33 x 4 1/2	34 x 5	34 x 5	3750 134

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1 1/4 Ton

Autocar F...
Autocar G...
Clinton 20
Clydesdale 10
Clydesdale 10
Clydesdale 10
Defiance G-2...
Defiance G-2...
Defiance GLA...
Diamond T-O
Eagle 101...
Gramm-Phone...
Hurlbut ST...
Iarabee-Dy...
Macacar EX...
Master 11...
Menominee H...
Perfection B...
Reo F Speed W...
Republic Rap...
Rugles 20-R...
Service 25...
Standard 75...
Stewart 15X...
Stoughton C...
U.S. U...
Yellow Cab M...

1½ Ton

Ace 30.....
 Acme 30.....
 Armleder 21B.....
 Armleder 40B.....
 Armleder 40C.....
 Atterbury 20F.....
 Autocar F.....
 Autocar G.....
 Available JH.....
 Basemer H2.....
 Brinton C.....
 Broadway S7.....
 Chicago C.....
 Columbia H.....
 Commerce 14.....
 Corbitt D-22.....
 Day-Elder AN.....
 Defiance D-2.....
 Diamond T-T.....
 Diehl B.....
 Dixon D.....
 D-Olt AA.....
 Duplex GH.....
 Federal S-23.....

For full name and address of manufacturer and information regarding complete line see page 68

TRADE NAME AND MODEL	Chassis Price	ENGINE DETAILS										GEARSET			FRONT AXLE		REAR AXLE		Total Gear Reduction in High		Total Gear Reduction in Low		Steering Gear (Make)		TIRES, WHEELS, RIMS			Chassis Weight (Stripped)	Wheelbase																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
		Make and Model Number A cylinder unless otherwise noted.	Bore and Stroke	N.A.C.C. Horsepower	Valve Arrangement	Radiator (Make)	Lubrication	Carburetor	Fuel Feed	Governor (Make)	Ignition System	Engine Starter	Clutch (Make)	Make and Model Number		Location	Speeds	Universal (Make)		Front Axle and Model Number		Type		Total Gear Reduction in High	Total Gear Reduction in Low	Steering Gear (Make)	Pneumatic Dual Solid			Wheels (Make)	Rim Equipment																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
														Make	Model Number			Make	Model Number	Make	Model Number	Make	Model Number				Make				Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make	Model Number	Make

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For full name and address of manufacturer and information regarding complete line see page 68

TRADE NAME AND MODEL	Chassis Price	ENGINE DETAILS										GEARSET		FRONT AXLE and Model Number	REAR AXLE		Total Gear Reduction in High	Total Gear Reduction in Low	Steering Gear (Make)	TIRES, WHEELS, RIMS		Chassis Weight (Stripped)	Wholesale							
		Make and Model Number	Bore and Stroke	N.A.C.C. Horsepower	Valve Arrangement	Radiator (Make)	Lubrication	Carburetor	Fuel Feed	Governor (Make)	Ignition System	Engine Starter	Clutch (Make)		Make and Model Number	Location				Speeds	Universal (Make)			Springs (Make)	Final Drive	Make and Model Number	Type			
2½ Ton																														
Ame 60.	3350	Cont K-4	4 1/2 x 5 1/2	27.2	L	GO	FS	Zen	V	Dup	Eis	Del	B.B.	Cott RU	U	4	Bld	Det	Tim 1540B	W	Tim 6500	F	9.25	48.10	Ros	30x4	36x7	36x4	4830	152
American.	3350	Wis	4 1/2 x 6	25.6	L	Bus	F	Strm	G	Pier	Spl	Wes	Own	Cott R-4	U	4	Acm	SP	Tim 1540B	W	Tim 6500	F	7.57	40.8	Ros	30x4	36x7	36x4	5000	158
American-LaFrance 2R	3350	Buda HTU	4 1/2 x 6	28.9	L	Bus	F	Strm	G	Pier	Spl	Wes	Own	Cott R-4	U	4	Acm	SP	Tim 1540B	W	Tim 6500	F	9.25	49.5	Ros	30x4	36x7	36x4	5000	Op
Armstrong HWC	3150	Cont C-4	4 1/2 x 5 1/2	27.2	L	Lng	FS	Zen	V	Pier	Spl	Wes	Own	Cott R-4	U	4	Spic	Math	Tim 1548B	W	Tim 6500	F	9.25	49.5	Ros	30x4	36x7	36x4	5000	Op
Atterbury 22C Std.	3375	Cont K-4	4 1/2 x 5 1/2	27.2	L	Lng	FS	Zen	V	Pier	Spl	Wes	Own	Cott R-4	U	4	Spic	Math	Tim 1548B	W	Tim 6500	F	9.25	49.5	Ros	30x4	36x7	36x4	5000	Op
Atterbury 22C LWB.	3475	Cont K-4	4 1/2 x 5 1/2	27.2	L	Lng	FS	Zen	V	Pier	Spl	Wes	Own	Cott R-4	U	4	Spic	Math	Tim 1542B	W	Tim 6500	F	9.25	49.5	Ros	30x4	36x7	36x4	5000	Op
Autocar K.	3450	Own	4 1/2 x 5 1/2	25.6	L	Own	S	Strm	G	Pier	Spl	Wes	Own	Cott R-4	U	4	Spic	Math	Tim 1542B	W	Tim 6500	F	7.72	46.3	Ros	30x4	36x7	36x4	5000	114
Autocar K.	3450	Own	4 1/2 x 5 1/2	25.6	L	Own	S	Strm	G	Pier	Spl	Wes	Own	Cott R-4	U	4	Spic	Math	Tim 1542B	W	Tim 6500	F	7.72	46.3	Ros	30x4	36x7	36x4	5000	114
Available JH2½	3160	Her O	4 1/2 x 5 1/2	25.6	L	Chic	FS	Zen	V	Pier	Spl	Wes	Own	Cott R-4	U	4	Bld	Det	Tim 510	W	Tim 6500	F	8.5	40.3	Ros	30x4	36x7	36x4	4500	152
Bessmer JH2½	2895	Cont C-4	4 1/2 x 5 1/2	27.2	L	Chic	FS	Zen	V	Pier	Spl	Wes	Own	Cott R-4	U	4	Bld	Det	Tim 1540B	W	Tim 6500	F	7.75	41.5	Ros	30x4	36x7	36x4	4500	152
Bets D-3	2975	Cont C-4	4 1/2 x 5 1/2	27.2	L	Chic	FS	Zen	V	Pier	Spl	Wes	Own	Cott R-4	U	4	Bld	Det	Tim 1540B	W	Tim 6500	F	7.75	41.5	Ros	30x4	36x7	36x4	4500	152
Brinton D.	2975	Cont C-4	4 1/2 x 5 1/2	27.2	L	Chic	FS	Zen	V	Pier	Spl	Wes	Own	Cott R-4	U	4	Bld	Det	Tim 1540B	W	Tim 6500	F	7.75	41.5	Ros	30x4	36x7	36x4	4500	152
Brookway K.	2450	Cont K-4	4 1/2 x 5 1/2	25.6	L	Pre	FS	Zen	V	Pier	Spl	Wes	Own	Cott R-4	U	4	Bld	Det	Tim 1542	W	Tim 6500	F	8.45	41.9	Ros	30x4	36x7	36x4	4500	152
Chicago 25.	2450	Her O	4 1/2 x 5 1/2	25.6	L	Lng	FS	Zen	V	Pier	Spl	Wes	Own	Cott R-4	U	4	Bld	Det	Tim 1542B	W	Tim 6500	F	7.75	41.5	Ros	30x4	36x7	36x4	4500	152
Columbia 8.	2450	Cont K-4	4 1/2 x 5 1/2	25.6	L	Own	F	Strm	V	Pier	Spl	Wes	Own	Cott R-4	U	4	Bld	Det	Tim 1542B	W	Tim 6500	F	7.75	41.5	Ros	30x4	36x7	36x4	4500	152
Clydesdale 8.	2450	Cont K-4	4 1/2 x 5 1/2	25.6	L	Own	F	Strm	V	Pier	Spl	Wes	Own	Cott R-4	U	4	Bld	Det	Tim 1542B	W	Tim 6500	F	7.75	41.5	Ros	30x4	36x7	36x4	4500	152
Commerce 26B.	2450	Cont K-4	4 1/2 x 5 1/2	25.6	L	Own	F	Strm	V	Pier	Spl	Wes	Own	Cott R-4	U	4	Bld	Det	Tim 1544	W	Tim 6500	F	7.75	41.5	Ros	30x4	36x7	36x4	4500	152
Concord J.	2450	Buda EBU	4 1/2 x 5 1/2	28.9	L	Own	F	Strm	V	Pier	Spl	Wes	Own	Cott R-4	U	4	Bld	Det	Tim 3FA10	W	Tim 6500	F	9.25	49.5	Ros	30x4	36x7	36x4	4500	152
Concord J.	2450	Cont K-4	4 1/2 x 5 1/2	27.2	L	Own	F	Strm	V	Pier	Spl	Wes	Own	Cott R-4	U	4	Bld	Det	Tim 3FA10	W	Tim 6500	F	9.25	49.5	Ros	30x4	36x7	36x4	4500	152
Corbett B-22.	2450	Cont K-4	4 1/2 x 5 1/2	27.2	L	Bus	FS	Zen	V	Pier	Spl	Wes	Own	Cott R-4	U	4	Bld	Det	Tim 3FA10	W	Tim 6500	F	9.25	49.5	Ros	30x4	36x7	36x4	4500	152
Day-Elder DN.	2450	Cont K-4	4 1/2 x 5 1/2	27.2	L	Bus	FS	Zen	V	Pier	Spl	Wes	Own	Cott R-4	U	4	Bld	Det	Tim 3FA10	W	Tim 6500	F	9.25	49.5	Ros	30x4	36x7	36x4	4500	152
Dependable D.	2650	Cont K-4	4 1/2 x 5 1/2	27.2	L	Own	F	Strm	V	Pier	Spl	Wes	Own	Cott R-4	U	4	Bld	Det	Tim 350	W	Tim 6500	F	8.5	35.75	Ros	30x4	36x7	36x4	4500	152
Dependable T-U2.	2650	Buda ITU	4 1/2 x 5 1/2	25.6	L	GO	F	Strm	V	Pier	Spl	Wes	Own	Cott R-4	U	4	Bld	Det	Tim 1544B	W	Tim 6500	F	7.8	36.81	Ros	30x4	36x7	36x4	4500	152
Diamond 7.	3250	Cont K-4	4 1/2 x 5 1/2	27.2	L	Own	F	Strm	V	Pier	Spl	Wes	Own	Cott R-4	U	4	Bld	Det	Tim 1540	W	Tim 6500	F	8.5	35.75	Ros	30x4	36x7	36x4	4500	152
D-Oit C.	2850	Mid 402	4 1/2 x 5 1/2	27.2	L	Mod	F	Strm	V	Pier	Spl	Wes	Own	Cott R-4	U	4	Bld	Det	Tim 1540	W	Tim 6500	F	8.5	35.75	Ros	30x4	36x7	36x4	4500	152
Duplex AC.	3250	Cont K-4	4 1/2 x 5 1/2	27.2	L	Own	F	Strm	V	Pier	Spl	Wes	Own	Cott R-4	U	4	Bld	Det	Tim 1540	W	Tim 6500	F	8.5	35.75	Ros	30x4	36x7	36x4	4500	152
Duplex AC.	3250	Buda HTU	4 1/2 x 5 1/2	28.9	L	Own	F	Strm	V	Pier	Spl	Wes	Own	Cott R-4	U	4	Bld	Det	Tim 1540	W	Tim 6500	F	8.5	35.75	Ros	30x4	36x7	36x4	4500	152
Federal U-2.	3175	Buda EBU	4 1/2 x 5 1/2	28.9	L	Own	F	Strm	V	Pier	Spl	Wes	Own	Cott R-4	U	4	Bld	Det	Tim 1542B	W	Tim 6500	F	7.75	41.5	Ros	30x4	36x7	36x4	4500	152
Garford 70 H.	3250	Buda EBU	4 1/2 x 5 1/2	28.9	L	Own	F	Strm	V	Pier	Spl	Wes	Own	Cott R-4	U	4	Bld	Det	Tim 1542B	W	Tim 6500	F	7.75	41.5	Ros	30x4	36x7	36x4	4500	152
Gary J.	3175	Buda EBU	4 1/2 x 5 1/2	28.9	L	Own	F	Strm	V	Pier	Spl	Wes	Own	Cott R-4	U	4	Bld	Det	Tim 1542B	W	Tim 6500	F	7.75	41.5	Ros	30x4	36x7	36x4	4500	152
Geddeson.	2650	Cont K-4	4 1/2 x 5 1/2	25.6	L	Own	F	Strm	V	Pier	Spl	Wes	Own	Cott R-4	U	4	Bld	Det	Tim 1520	W	Tim 6500	F	8.25	43.5	Ros	30x4	36x7	36x4	4500	152
Gramm-Pioneer 125.	3000	Wau CU	4 1/2 x 5 1/2	30.6	L	Own	F	Strm	V	Pier	Spl	Wes	Own	Cott R-4	U	4	Bld	Det	Tim 1520	W	Tim 6500	F	8.25	43.5	Ros	30x4	36x7	36x4	4500	152
Grass Premier 80.	2950	Buda ETU	4 1/2 x 5 1/2	28.9	L	Own	F	Strm	V	Pier	Spl	Wes	Own	Cott R-4	U	4	Bld	Det	Tim 1520	W	Tim 6500	F	8.25	43.5	Ros	30x4	36x7	36x4	4500	152
Harvey WFB.	2145	Buda HU	4 1/2 x 5 1/2	28.9	L	Own	F	Strm	V	Pier	Spl	Wes	Own	Cott R-4	U	4	Bld	Det	Tim 1520	W	Tim 6500	F	8.25	43.5	Ros	30x4	36x7	36x4	4500	152
Hawkeye M.	2145	Buda HU	4 1/2 x 5 1/2	28.9	L	Own	F	Strm	V	Pier	Spl	Wes	Own	Cott R-4	U	4	Bld	Det	Tim 1520	W	Tim 6500	F	8.25	43.5	Ros	30x4	36x7	36x4	4500	152
Hawkeye M.	2145	Buda HU	4 1/2 x 5 1/2	28.9	L	Own	F	Strm	V	Pier	Spl	Wes	Own	Cott R-4	U	4	Bld	Det	Tim 1520	W	Tim 6500	F	8.25	43.5	Ros	30x4	36x7	36x4	4500	152
Hawkeye M.	2195	Buda HU	4 1/2 x 5 1/2	28.9	L	Own	F	Strm	V	Pier	Spl	Wes	Own	Cott R-4	U	4	Bld	Det	Tim 1520	W	Tim 6500	F	8.25	43.5	Ros	30x4	36x7	36x4	4500	152
Independent HW (Iowa)	2195	Cont K-4	4 1/2 x 5 1/2	25.6	L	Own	F	Strm	V	Pier	Spl	Wes	Own	Cott R-4	U	4	Bld	Det	Tim 1520	W	Tim 6500	F	8.25	43.5	Ros	30x4	36x7	36x4	4500	152
International 25.	2440	Own 38	4 1/2 x 5 1/2	27.2	L	Own	F	Strm	V	Pier	Spl	Wes	Own	Cott R-4	U	4	Bld	Det	Tim 1520	W	Tim 6500	F	8.25	43.5	Ros	30x4	36x7	36x4	4500	152
International 52-Bus.	2440	Own 38	4 1/2 x 5 1/2	27.2	L	Own	F	Strm	V	Pier	Spl	Wes	Own	Cott R-4	U	4	Bld	Det	Tim 1520	W	Tim 6500	F	8.25	43.5	Ros	30x4</				

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For full name and address of manufacturer and information regarding complete line see page 68

TRADE NAME AND MODEL	Chassis Price	Make and Model Number 4 cylinder unless otherwise noted.	ENGINE DETAILS										GEARSET			FRONT AXLE and Model Number		REAR AXLE		TIRES, WHEELS, RIMS																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																								
			Bore and Stroke	N.A.C.C. Horsepower	Valve Arrangement	Radiator (Make)	Lubrication	Carburetor	Fuel Feed	Governor (Make)	Ignition System	Engine Starter	Clutch (Make)	Make and Model Number	Location	Speeds	Universal (Make)	Springs (Make)	Model Number	Final Drive	Make and Model Number	Type	Total Gear Reduction in High	Total Gear Reduction in Low	Steering Gear (Make)	Front		Rear		Wheels (Make)	Rim Equipment	Chassis Weight (Stripped)	Wheelbase																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																											

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For full name and address of manufacturer and information regarding complete line see page 68

TRADE NAME AND MODEL	Chassis Price	ENGINE DETAILS										GEARSET		FRONT AXLE and Model Number		REAR AXLE		Total Gear Reduction in High		Total Gear Reduction in Low		Steering Gear (Make)		Tires, Wheels, Rims		Chassis Weight (Stripped)	Wheelbase			
		Make and Model Number 4 cylinder unless otherwise noted.	Bore and Stroke	N.A.C.C. Horsepower	Valve Arrangement	Radiator (Make)	Lubrication	Carburetor	Fuel Feed	Governor (Make)	Ignition System	Engine Starter	Clutch (Make)	Make and Model Number		Location	Speeds	Universal (Make)	Springs (Make)	Model Number	Final Drive	Make and Model Number		Type						
														Make	Model Number							Make	Model Number							
5 1/2, 6 and 7 Ton																														
Autocar L	4800	Own	4 1/2 x 5 1/2	28.9	L	Own	S	Strm	G	Phar	Bos	Opt	Own	Owh	60	A	4	Spic	Del	Own	1732 B	8.7	52.3	Ros	34x6	36x12	Hoo	20	7400	156
Autocar M	4650	Own	4 1/2 x 5 1/2	28.9	L	Own	S	Strm	G	Phar	Bos	Opt	Own	B-Li	60	A	4	Spic	Del	Own	1732 B	8.7	52.3	Ros	34x6	36x12	Hoo	20	7200	190
Clinton 1208	4990	Buda BTU	4 1/2 x 5 1/2	36.1	L	Own	F	Strm	V	Phar	RBo	Opt	Own	B-Li	60	A	4	M-E	Stan	Tim	1730B	11.66	62.4	Ros	36x6	40x7 1/2	StM	20	9400	180
Clydesdale 2	5750	Buda BTU	4 1/2 x 5 1/2	36.1	L	Own	F	Strm	V	Phar	RBo	Opt	Own	B-Li	60	A	4	Spic	Stan	Tim	1730B	11.66	62.4	Ros	36x6	40x7 1/2	StM	20	9700	176
Garford 160 A-7 1/2	5750	Buda BTU	4 1/2 x 5 1/2	36.1	L	Own	F	Strm	G	Phar	RBo	Opt	Own	B-Li	60	A	4	Spic	Per	Tim	1730B	11.44	62.5	Ros	36x6	40x7 1/2	StM	20	10200	162
Gramm-Bernstein 50-60	4450	Cont	4 1/2 x 5 1/2	36.1	L	Own	F	Strm	G	Phar	RBo	Opt	Own	B-Li	60	A	4	Spic	Per	Tim	1730B	10.5	62	Ros	36x6	40x7 1/2	StM	20	9700	168
Hurlburt E-E	4850	Buda ATU	4 1/2 x 5 1/2	36.1	L	Own	F	Strm	G	Phar	RBo	Opt	Own	B-Li	60	A	4	Spic	Per	Tim	1730B	10.5	62	Ros	36x6	40x7 1/2	StM	20	9700	168
Kelly-Springfield K-61	4850	Buda ATU	4 1/2 x 5 1/2	36.1	L	Own	F	Strm	G	Phar	RBo	Opt	Own	B-Li	60	A	4	Spic	Per	Tim	1730B	10.5	62	Ros	36x6	40x7 1/2	StM	20	9700	168
Luedinghaus	4850	Buda ATU	4 1/2 x 5 1/2	36.1	L	Own	F	Strm	G	Phar	RBo	Opt	Own	B-Li	60	A	4	Spic	Per	Tim	1730B	10.5	62	Ros	36x6	40x7 1/2	StM	20	9700	168
Mack AC 7 1/2	5750	Wau EU	4 1/2 x 5 1/2	36.1	L	Own	F	Strm	G	Phar	RBo	Opt	Own	B-Li	60	A	4	Spic	Per	Tim	1730B	10.5	62	Ros	36x6	40x7 1/2	StM	20	9700	168
Mack AC 7 1/2	5750	Wau EU	4 1/2 x 5 1/2	36.1	L	Own	F	Strm	G	Phar	RBo	Opt	Own	B-Li	60	A	4	Spic	Per	Tim	1730B	10.5	62	Ros	36x6	40x7 1/2	StM	20	9700	168
Master 64	6000	Own AC	4 1/2 x 5 1/2	36.1	L	Own	S	Strm	G	Phar	RBo	Opt	Own	B-Li	60	A	4	Spic	Mer	Wia	Clark 5H	11.6	61.8	Gem	36x6	40x7 1/2	Cla	20	9025	156
Pierce Arrow R-7 1/2	5200	Wau P	4 1/2 x 5 1/2	36.1	L	Own	S	Strm	G	Phar	RBo	Opt	Own	B-Li	60	A	4	Spic	Mer	Wia	Clark 5H	11.6	61.8	Gem	36x6	40x7 1/2	Cla	20	9025	156
Pierce Arrow RE	5100	Own	4 1/2 x 5 1/2	36.1	L	Own	S	Strm	G	Phar	RBo	Opt	Own	B-Li	60	A	4	Spic	Mer	Wia	Clark 5H	11.6	61.8	Gem	36x6	40x7 1/2	Cla	20	9025	156
Rainier 103	5100	Own	4 1/2 x 5 1/2	36.1	L	Own	S	Strm	G	Phar	RBo	Opt	Own	B-Li	60	A	4	Spic	Mer	Wia	Clark 5H	11.6	61.8	Gem	36x6	40x7 1/2	Cla	20	9025	156
Service 103	5100	Own	4 1/2 x 5 1/2	36.1	L	Own	S	Strm	G	Phar	RBo	Opt	Own	B-Li	60	A	4	Spic	Mer	Wia	Clark 5H	11.6	61.8	Gem	36x6	40x7 1/2	Cla	20	9025	156
Standard 5-7K	6500	Cont B-5	4 1/2 x 5 1/2	36.1	L	Own	S	Strm	G	Phar	RBo	Opt	Own	B-Li	60	A	4	Spic	Mer	Wia	Clark 5H	11.6	61.8	Gem	36x6	40x7 1/2	Cla	20	9025	156
Sterling 7 1/2 Chain	6500	Own	4 1/2 x 5 1/2	36.1	L	Own	S	Strm	G	Phar	RBo	Opt	Own	B-Li	60	A	4	Spic	Mer	Wia	Clark 5H	11.6	61.8	Gem	36x6	40x7 1/2	Cla	20	9025	156
U. S. T	5000	Buda ATU	4 1/2 x 5 1/2	36.1	L	Own	S	Strm	G	Phar	RBo	Opt	Own	B-Li	60	A	4	Spic	Mer	Wia	Clark 5H	11.6	61.8	Gem	36x6	40x7 1/2	Cla	20	9025	156
Walter R.	5400	Own DU	4 1/2 x 5 1/2	36.1	L	Own	S	Strm	G	Phar	RBo	Opt	Own	B-Li	60	A	4	Spic	Mer	Wia	Clark 5H	11.6	61.8	Gem	36x6	40x7 1/2	Cla	20	9025	156
Gasoline Tractor-Trucks																														
Federal Light Duty	Cont K-4	Own	4 1/2 x 5 1/2	27.2	L	Own	F	Zen	V	Phar	Eis	Rm	Opt	Det	W-Gr	A	4	Spic	...	Own	1630B	8.5	50.15	Gem	36x4	36x12	...	20	5000	121
Federal Heavy Duty	Cont L-4	Own	4 1/2 x 5 1/2	27.2	L	Own	F	Zen	V	Phar	Eis	Rm	Opt	Det	W-Gr	A	4	Spic	...	Own	1630B	8.5	50.15	Gem	36x4	36x12	...	20	5000	121
G. M. C. K-41T-5 Ton	Own	Own	4 1/2 x 5 1/2	27.2	L	Own	F	Zen	V	Phar	Eis	Rm	Opt	Det	W-Gr	A	4	Spic	...	Own	1630B	8.5	50.15	Gem	36x4	36x12	...	20	5000	121
G. M. C. K-41T-10 Ton	Own	Own	4 1/2 x 5 1/2	27.2	L	Own	F	Zen	V	Phar	Eis	Rm	Opt	Det	W-Gr	A	4	Spic	...	Own	1630B	8.5	50.15	Gem	36x4	36x12	...	20	5000	121
G. M. C. K-101T-15 Ton	Own	Own	4 1/2 x 5 1/2	27.2	L	Own	F	Zen	V	Phar	Eis	Rm	Opt	Det	W-Gr	A	4	Spic	...	Own	1630B	8.5	50.15	Gem	36x4	36x12	...	20	5000	121
Harvey WFT	3050	Buda ETU	4 1/2 x 5 1/2	28.9	L	Own	F	Zen	V	Phar	Eis	Rm	Opt	Det	W-Gr	A	4	Spic	...	Own	1630B	8.5	50.15	Gem	36x4	36x12	...	20	5000	121
Harvey WFT	4050	Buda ETU	4 1/2 x 5 1/2	28.9	L	Own	F	Zen	V	Phar	Eis	Rm	Opt	Det	W-Gr	A	4	Spic	...	Own	1630B	8.5	50.15	Gem	36x4	36x12	...	20	5000	121
International 62.3 Ton	Own	Own	4 1/2 x 5 1/2	28.9	L	Own	F	Zen	V	Phar	Eis	Rm	Opt	Det	W-Gr	A	4	Spic	...	Own	1630B	8.5	50.15	Gem	36x4	36x12	...	20	5000	121
Mack AB 5-Ton	3400	Own AB	4 1/2 x 5 1/2	28.9	L	Own	F	Zen	V	Phar	Eis	Rm	Opt	Det	W-Gr	A	4	Spic	...	Own	1630B	8.5	50.15	Gem	36x4	36x12	...	20	5000	121
Mack AC 7-Ton	4950	Own AC	4 1/2 x 5 1/2	28.9	L	Own	F	Zen	V	Phar	Eis	Rm	Opt	Det	W-Gr	A	4	Spic	...	Own	1630B	8.5	50.15	Gem	36x4	36x12	...	20	5000	121
Mack AC 10-Ton	5500	Own AC	4 1/2 x 5 1/2	28.9	L	Own	F	Zen	V	Phar	Eis	Rm	Opt	Det	W-Gr	A	4	Spic	...	Own	1630B	8.5	50.15	Gem	36x4	36x12	...	20	5000	121
Mack AC 13-Ton	5750	Own AC	4 1/2 x 5 1/2	28.9	L	Own	F	Zen	V	Phar	Eis	Rm	Opt	Det	W-Gr	A	4	Spic	...	Own	1630B	8.5	50.15	Gem	36x4	36x12	...	20	5000	121
Mack AC 15-Ton	6000	Own AC	4 1/2 x 5 1/2	28.9	L	Own	F	Zen	V	Phar	Eis	Rm	Opt	Det	W-Gr	A	4	Spic	...	Own	1630B	8.5	50.15	Gem	36x4	36x12	...	20	5000	121
Pierce Arrow XB	Own	Own	4 1/2 x 5 1/2	28.9	L	Own	F	Zen	V	Phar	Eis	Rm	Opt	Det	W-Gr	A	4	Spic	...	Own	1630B	8.5	50.15	Gem	36x4	36x12	...	20	5000	121
Pierce Arrow WD	Own	Own	4 1/2 x 5 1/2	28.9	L	Own	F	Zen	V	Phar	Eis	Rm	Opt	Det	W-Gr	A	4	Spic	...	Own	1630B	8.5	50.15	Gem	36x4	36x12	...	20	5000	121
Pierce Arrow RF	Own	Own	4 1/2 x 5 1/2	28.9	L	Own	F	Zen	V	Phar	Eis	Rm	Opt	Det	W-Gr	A	4	Spic	...	Own	1630B	8.5	50.15	Gem	36x4	36x12	...	20	5000	121
Walter FT	6500	Own DU	4 1/2 x 5 1/2	28.9	L	Own	F	Zen	V	Phar	Eis	Rm	Opt	Det	W-Gr	A	4	Spic	...	Own	1630B	8.5	50.15	Gem	36x4	36x12	...	20	5000	121

New Woonsocket Body and Hoist

The Woonsocket Manufacturing Company, of Woonsocket, R. I., have just brought out an improved type body and hoist for a Ford one-ton truck. The hoist and body is a complete unit, entailing the minimum of difficulty in shipping, handling and attaching.

The body is all steel, of No. 12 gage blue annealed, well riveted, welded and braced; equipped with a double acting tailgate, making the body that of a combination type, for use in handling any kind of material. The dimensions are 7 ft. x 4 ft., 6 in. x 12 in. with a 4-in. wing.

The hoist is standard in every way so that parts may be duplicated without delay. The same equipment with the body 8 ft. long is made for Reo, Dodge, Graham and all other one ton speed chassis.

Weidely Motors to be Sold at Auction

A court order has been issued for the sale, at auction, of the assets of the Weidely Motors Co., of Indianapolis, now in the hands of a receiver. Last August a receiver was appointed in a friendly proceeding brought to conserve the assets of the company. At that time a number of companies which had been purchasing engines from Weidely Company had suspended acceptance of engines on contracts, pending improvement in their own condition.

A plan of reorganization is said to have been worked out by officers of the company and a committee representing the present owners is expected to bid in the property.

Clinton Leases Plant and Equipment of Schwartz

The Clinton Motors Corporation of Reading, Pa., has leased the plant and equipment of the Schwartz Motor Truck Corp., for a term of years and is continuing the manufacture of Clinton motor trucks. The Clinton company was organized three years ago by A. E. Hoffmann of New York City, who for a number of years has marketed, manufactured and distributed trucks throughout the country.

New License Plate Bureau in New York City

A special bureau for the issuance of 1924 license plates to automobilists has been opened in the Colonnade Building, Broadway between 57th and 58th Streets, New York City, in the heart of the automobile trade. Space for establishment of the bureau has been donated by Dr. John A. Harriss, Deputy Police Commissioner, to the Automobile Merchants' Association of New York and the Metropolitan Automobile Association, which is the eastern headquarters of the American Automobile Association. The bureau is being operated jointly and co-operatively by the two associations under permission from the State Tax Commission.

ELECTRIC COMMERCIAL CARS

Name and Model Number	Carrying Capacity	Chassis Weight Exclusive of Battery	Chassis Weight with Minimum Battery Capacity	Chassis Weight With Maximum Battery Capacity	Chassis Price	Maximum Speed	Location of Battery	Mileage Per Charge	Motor	Controller	Speeds Forward	Drive	Rear Axle	Springs	Front Tires	Rear Tires	Steering Gear	Wheelbase	Per Cent of Weight on Rear Wheels
C-T D-1.....	1000	2200			1700	14	A	55	G-E	Own	4	Own	Flot	Shel	36x3	36x3½	W	100	69
C-T B-1.5.....	1500	2300			2100	14	A	60	G-E	Own	4	Own	Flot	Shel	36x3	36x4	W	91½	65
C-T D-1.5.....	1500	2300			2100	14	A	60	G-E	Own	4	Own	Flot	Shel	36x3	36x4	W	116	71
C-T B-2.....	2000	2400			2350	14	A	50	G-E	Own	4	Own	Flot	Shel	36x3½	36x5	W	101	66
C-T D-2.....	2000	2400			2350	14	A	50	G-E	Own	4	Own	Flot	Shel	36x3½	36x5	W	124	70
C-T B-4.....	4000	4000			2800	12	A	50	G-E	Own	4	Own	Flot	Shel	36x4	36x4½	W	116	68
C-T C-6.....	6000	4300			3100	10	A	45	G-E	Own	4	I	D	Shel	36x4	36x4½	W	122	70
C-T C-7.....	7000	5000			3800	10	A	45	G-E	Own	4	I	D	Shel	36x5	36x5½	W	126	65
C-T A-7.....	7000	5800			4150	11	A	45	G-E	Own	4	I	D	Shel	36x6	36x4½	W	122	60
C-T A-10.....	10000	6500			4250	10	A	45	G-E	Own	4	I	D	Shel	36x7	36x5½	W	132	59
Kelland AT.....	1000	1950	3050	3550		15	S	50	G-E	G-E	4	R	Flot	Mer	34x3	34x3	Ross	102	60
Kelland BT.....	1500	2050	3150	3950		15	S	50	G-E	G-E	4	R	Flot	Mer	34x3½	34x3½	Ross	102	60
Kelland CT.....	2000	2150	3450	4050		15	S	50	G-E	G-E	4	R	Flot	Mer	34x3½	34x4	Ross	102	60
Kelland AH.....	1000	2500	3600	4100		15	A	45	G-E	G-E	4	C	D	Mer	36x3	36x3	Hin	106	60
Kelland BH.....	1500	2600	3700	4500		15	A	45	G-E	G-E	4	C	D	Mer	36x3½	36x3½	Hin	106	60
Kelland CH.....	2000	2700	4000	4600		15	A	45	G-E	G-E	4	C	D	Mer	36x3½	36x4	Hin	106	60
Kelland BTS.....	1500	2300	3350	4200		15	H&S	50	G-E	G-E	4	R	Flot	Mer	34x3½	34x3½	Ross	102	60
Kelland CTS.....	2000	2500	3550	4400		15	H&S	50	G-E	G-E	4	R	Flot	Mer	34x3½	34x4	Ross	114	60
Lansden Century.....	1250	1700			1600	15	S	50	G-E	Own	4	R	Flot	SP	32x4½	32x4½	Lav	108	50
Lansden Century.....	2000	1950			1850	15	S	50	G-E	Own	4	R	Flot	SP	33x5	33x5	Lav	112	50
Lansden Marathon.....	2000	2900			1850	12	A	50	G-E	Own	4	C	D	SP	36x3½	36x4	KH	108	60
Lansden Marathon.....	4000	4400			2250	11	A	50	G-E	Own	4	C	D	SP	36x4	36x3½	KH	120	60
Lansden ME.....	7000	5700			2950	10	A	45	G-E	Own	4	C	D	SP	36x5	36x5½	KH	133	60
Lansden MF.....	10000	7500			3350	9	A	40	G-E	Own	4	C	D	SP	36x6	36x6½	KH	146	60
O. B. A.....	2000				2175	14			G-E	Own		C	D		36x3½	36x4	Own	103	
O. B. B.....	4000				2650	13			G-E	Own		C	D		36x4	36x3½	Own	107	
O. B. C.....	7000				3750	11			G-E	Own		C	D		36x5	36x4	Own	135	
O. B. D.....	10000				3950	10			G-E	Own		C	D		36x6	36x5	Own	143	
Steinmetz 10.....	1000	2000				16	H&S	52	Diehl	Own	4	R	Russ	Shel	32x4½	32x4½	Lav	106	60
Steinmetz 15.....	1500	2300				16	H&S	55	Diehl	Own	4	R	Russ	Shel	33x5	33x5	Lav	114	60
Walker 12.....	1000	1900				15		60	G-E	West	4		Tim	Det	32x3	32x3½	Ross	104	66
Walker 15.....	1500	2600				15		60	West	West	5	Own	Own	Math	34x3	36x3½	Ross	94	66
Walker 22.....	2000	2800				14		60	West	West	5	Own	Own	Math	34x3½	36x4	Ross	101	66
Walker 42.....	4000	3800				13		60	West	West	5	Own	Own	Math	36x4	36x6	Ross	114	66
Walker N.....	10000	6400				10		50	West	West	5	Own	Own	Math	36x6	38x6½	Ross	141	66
Walker P.....	7000	5600				11		50	West	West	5	Own	Own	Math	36x5	38x5½	Ross	131	66
Walter HD.....	2000	2300			2200	16	A	60	Diehl	G-E	5	B			32x3½	32x4	Ross	98	60
Walter EN.....	4000	4400			3100	15	A	50	G-E	G-E	5	Own	D		36x4	36x7	Gem	114	60
Walter EL.....	6000	5000			3700	13½	A	50	G-E	G-E	5	Own	D		36x5	36x4	Gem	132	60
Walter ES.....	10000	7200			4500	12	A	50	G-E	G-E	5	Own	D		36x6	40x6	Ross	150	70
Walter ER.....	14000	7500			4800	11	A	50	G-E	G-E	5	Own	D		36x7	40x7	Ross	150	70
Ward 4211.....	4000					15	S	75	G-E	Own	4	W	Shel	Shel	32x4*	33x4½*	Own	88	56
Ward B-222.....	5000					14	S	84	G-E	Own	4	W	Shel	Shel	32x3½*	32x4*	Own	91	62
Ward C-211.....	7000					13	S	65	G-E	Own	4	W	Shel	Shel	32x3½*	34x5*	Own	96	64
Ward E-111.....	10000					12½	S	56½	G-E	Own	4	W	Shel	Shel	34x4*	36x6*	Own	108	65
Ward G-111.....	14000					11	A	44	G-E	G-E	5	W	Shel	Shel	36x5*	36x8*	Own	120	68
Ward J-111.....	20500					10	A	39½	G-E	G-E	5	W	Shel	Shel	36x6*	36x10*	Own	132	70
Ward M-111.....	28000					9	A	36	G-E	G-E	5	W	Shel	Shel	36x7*	40x14*	Own	146	71

NOTE: Battery Equipment in all above makes is at the option of the purchaser. Battery Location Abbreviations: A—amidships; H—under hood; and S—under seat.

Transportation Company to Enter Truck Field

The Red Ball Transit Co., of Indianapolis, national household movers, announce the introduction of a new 3-ton truck to be made at their plant in Frankfort, Ind. It was the original intention of this company to merely supply their own needs, but they have now decided to place a heavy-duty model on the market at \$2200 f.o.b. factory. The truck has been designed for long distance hauling, but its sturdiness and flexibility will make it adaptable for many other purposes, according to the maker.

The truck will have a number of special features such as four-wheel brakes, Waukesha 4½ x 5½-in. motor, Bosch magneto, starting and lighting, M. & E. clutch, gasoline tank in rear to avoid fire hazard, etc. Specifications of the new truck will be sent on request.

The officers of the Red Ball Transit Co. are: W. B. Hiner, president and treasurer; Jule Suratt, secretary; C. M. Gentry, vice-president and general manager; Robert L. Hiner, assistant general manager and Geo. W. Person, general sales manager.

Officers of Dayton Engineering Laboratories Elected

Alfred P. Sloan, Jr. president of General Motors announces that at a meeting of the directors of the Dayton Engineering Laboratories Company held December 19, in Detroit the following officers were elected: Charles F. Kettering, president; O. L. Harrison, vice-president and acting general manager; W. A. Chryst, vice-president in charge of engineering and D. K. Banker, resident comptroller, assistant treasurer and assistant secretary.

Correction

The word "not" was omitted from the sentence beginning "For the Good Roads Show * * *" in the first paragraph of "The 1924 Good Roads Show" article on page 11, Commercial Car Journal for December 15. The sentence should read "For the Good Roads Show cannot be classed in the same category with the popular types of exhibitions, as for instance food shows, household appliance shows, electrical shows, automobile shows, etc."

Motor Industry Plans Anti-Accident Fight

The Traffic Planning and Safety Committee of the National Automobile Chamber of Commerce announces that, as a result of its meeting held in Detroit recently, a program has been formulated for 1924 which promises to reduce highway accidents in the next twelve months.

The automobile chamber has been active in the safety movement for a number of years, particularly in calling for punishment of the reckless motorist, and constructively in encouraging safety education in the schools.

The present committee aims to amplify this work, and to carry on a comprehensive program which will attack the various causes of accidents. The first step of the committee is the planning of a nation-wide research to determine what are the major causes.

The Traffic Planning and Safety Committee of the National Automobile Chamber of Commerce consists of George M. Graham, chairman; Alvan Macaulay, Edward S. Jordan, Geo. H. Pride, A. B. C. Hardy, John C. Long, secretary.

DETAILED MOTOR

These Tables Consist Only of Specifications Received Directly From the Manufacturer. Every Commercial Chassis or Those Recom

Line Number	TRADE NAME AND NUMBER	Capacity Seats	Chassis Price	UNLOADED WEIGHT (In Pounds)			GENERAL DIMENSIONS							ENGINE DETAILS										NORMAL SPEED M.P.H.	
				Chassis Only	Chassis and Body	Recommended Body Weight	Wheelbase	Tread, Front	Tread, Rear	Floor Height	Turning Radius	Over-All Length	Over-All Width	Clearance from Ground	Make and Model Number	Bore and Stroke	Horsepower	Valve Arrang'mt	Fuel Feed	Lubrication	Carburetor (Make)	Radiator (Make)	Ignition System	High	Low
1	Acme K.	30	6900	9900	3000	200	58 1/2	74	27	38	312	90	5	1	Cont 6B	3 3/4 x 5	33.7	L	V F	Zen	Own	Eis	30	5.7	
2	Avery.	18	2800	4000	129	56	53	32	42	26	262	86	9	2	Own 6	3 x 4	21.6	L	V F	Zen	Own	KW	20	6	
3	Belmont.	30	5000	7200	2200	184	56	20	27	262	86	9	9	3	Buda EBU	4 1/4 x 5 1/2	28.9	L	V F	Zen	Own	Bos	25	3	
4	Bethlehem KN	16	1695	2650	800	125	56	56	26	175	64 1/2	10	10	4	Own	3 3/4 x 5	19.6	L	V F	Zen	GO	Bos	35	...	
5	Bethlehem GN.	25	2495	4100	1200	138	56	57 1/2	25	208 1/2	66 1/2	10	9	5	Own	4 x 5 1/2	25.6	L	V F	Zen	GO	Bos	25	...	
6	Bethlehem HN.	35	3295	5250	1500	145	56	59 1/2	26	226 1/2	70	10	10	6	Own	4 x 5 1/2	25.6	L	V F	Zen	GO	Bos	25	...	
7	Brinton.	25	3400		Op	58	58	36	30	Op		12	12	7	Cont	4 1/2 x 5 1/2	32.4	L	G F	Strm	Chic	Bos	25	...	
8	Brockway.	25	6400	9280	2880	185	66 1/2	71	28 1/2	31 1/2	295 1/4	84	10	8	Buda YBU	4 1/2 x 6	32.4	L	V F	Zen	GO	Bos	25	5	
9	Brockway.	30	6400	9580	3180	197	66 1/2	71	28 1/2	31 1/2	324 1/4	84	10	9	Buda YBU	4 1/2 x 6	32.4	L	V F	Zen	GO	Bos	25	5	
10	Clinton.	35	4075	5925	8700	2775	184	58 1/2	58 1/2	30	37	270	75 1/2	9 1/2	Buda EBU	4 1/2 x 5 1/2	28.9	L	V F	Zen	Own	Bos	30	3	
11	Commerce 25	24	5400	9400	4000	198	56	56	33 1/2	33	250	70	9	10	Cont 6B	3 3/4 x 5	33.7	L	V F	Zen	Lng	Bos	35	7	
12	Commerce 14	17	4200		160	56	56	30	27	228	81	9	9	11	Cont 6B	3 3/4 x 5	33.7	L	V F	Zen	Lng	Bos	35	7	
13	Commerce 20	14	4300	7300	7300	189	56	56	30	27	231	74	9	12	Cont 6B	3 3/4 x 5	33.7	L	V F	Zen	Lng	Bos	35	7	
14	Day-Elder 20	20	5200		2500	168	56	58	32	30	237	70 1/2	11	13	Cont K4	4 1/2 x 5 1/2	27.2	L	V F	Zen	Bus	Eis	35	10	
15	Day-Elder 25	25	5600		3000	180	58	58 1/2	32	30	260	75 1/2	11	14	Buda EBU	4 1/2 x 5 1/2	28.9	L	V F	Zen	Bus	Eis	35	7	
16	Day-Elder 30	30	6000		3500	192	68 1/2	74	25	27	271 1/2	90	6 1/2	15	Cont 6T	3 3/4 x 5 1/2	31.5	L	V F	Zen	Bus	Eis	35	7	
17	Defiance GL-3	19	3200	4700	1200	140	56	56	28	21	210	84	8	16	Cont 8 R	3 3/4 x 4 1/2	27.3	L	V F	Zen	Chic	Bos	30	5	
18	Denby 188.	26	6540		188	70	70	22	61	287	82	9 1/2	9 1/2	17	Cont 6B	3 3/4 x 5	31.5	L	V F	Zen	Lng	Bos	47	9	
19	Denby 216.	30	6860		216	70	70	22	73	287	82	9 1/2	9 1/2	18	Cont 6B	3 3/4 x 5	33.7	L	V F	Zen	Lng	Bos	47	9	
20	Fageol Inter City	22		8700	218	70	70	21	38	306	7 1/2	7 1/2	7 1/2	19	HS 50	4 1/2 x 5 1/2	28.9	H	V F	Zen	Lng	Del	35	6	
21	Fageol Street Car.	29		9600	218	70	76 1/2	20	38	312	89	7 1/2	7 1/2	20	HS 50	4 1/2 x 5 1/2	28.9	H	V F	Zen	Lng	Del	30	7	
22	Federal	18	4200		1800	160	56	59 1/2	28	28	245	10	10	21	Cont 6M	3 3/4 x 4 1/2	27.3	L	V F	Zen	Lng	Eis	35	7	
23	Federal	25	5450		2500	190	60	60	30	28	266 1/2	10	10	22	Cont 6B	3 3/4 x 5	33.7	L	V F	Zen	Mod	Eis	35	6	
24	Fifth Avenue J.	29	5660	8235	2575	172	68 1/2	71 1/2	29 1/2	31	277	89	7	23	Yellow	4 x 6	25.6	S	V F	Zen	Own	Eis	30	7.5	
25	Ford.	26			123	56	56	28	30	295	91	7	7	24	Buda YBU	4 1/2 x 6	32.4	L	V F	Strm	Own	Own	30	3	
26	Garford 51D	29	4350	6300	9400	3100	168	58	72	28 1/2	30	236	78 1/2	7 1/2	Buda EBU	4 1/2 x 5 1/2	28.9	L	V F	Strm	Own	Spl	35	5.4	
27	Garford 726.	25	3750	4800	7800	3000	168	56	65 1/2	32	30	236	77 1/2	10 1/2	Dodge	3 3/4 x 4 1/2	24.1	L	V F	Stew	McC	NE	25	5	
28	Graham CA.	16	1325	2910	4250	1600	140	56	56	34	24 1/2	30	83	11	Buda	3 3/4 x 4 1/2	24.1	L	V F	Stew	McC	NE	25	5	
29	Gulder.	30	4250	5400	8500	3000	191	64	70	26	70	300	83	11	Own 30	4 1/2 x 5 1/2	27.2	L	V F	Zen	GO	Eis	30	6	
30	Indiana 20.	22		5300	8900	3600	174	60	68	35	29	252 1/2	89 1/2	9 1/2	Own 38	4 1/2 x 5 1/2	27.2	L	V F	Strm	McC	Eis	23	6	
31	Indiana 25.	26	5850	9950	4100	192	60	68	35	32	279 1/2	89 1/2	9 1/2	9 1/2	Own 38	4 1/2 x 5 1/2	27.2	L	V F	Strm	McC	Eis	23	6	
32	International S.	14	2750	3500	750	124	56	56	20						Lycy KB	3 3/4 x 5	19.6	L	G F S	Ems	Lng	Con	25	5	
33	Jumbo.	25	6000	8500	2800	204	60	72	27		260	84	8	26	Buda EBU	4 1/2 x 5 1/2	28.9	L	V F	Zen	Spar	Bos	40	4	
34	Kissel.	18	5200	7780	2400	202	64 1/2	66	24		252	76	8	27	Own 4-36	4 1/2 x 5 1/2	28.9	L	V F	Zen	Fed	Bos	40	4	
35	Larrabee X 2.	14	3350	4750		155	56	56	29	28	216	70	11	28	Cont 8R	3 3/4 x 4 1/2	27.3	L	V F	Zen	Fed	Bos	30	3	
36	Larrabee XJ3	21	4300	6100		186	62	62	26	34	250	90	9	29	Cont 8R	3 3/4 x 4 1/2	27.3	L	V F	Zen	Fed	Bos	30	3	
37	Luedinghaus.	25	4400	5600	1200	170		58	44				11 1/2	30	Own	4 1/2 x 5 1/2	28.9	L	G S	Sheb	Brm	Spl	20	3	
38	Mack AB.	25	4435	6075	9075	3000	195	58 1/2	60 1/2	25 1/2	37 1/2	300	88	6 1/2	Own	4 1/2 x 5 1/2	28.9	L	V F S	Zen	Own	Spl	33	8	
39	Mason.	21	1320	3100	5800	2700	150	56	56	30		246	85	10	Her O	4 x 5	25.6	L	G F	John	Fed	AuL	35	12	
40	Master DDB.	30		6000	9500	3500	194	59	59	26	33 1/2				Buda EBU	4 1/2 x 5 1/2	28.9	L	V F S	Zen	Chic	Eis	25	5	
41	Menominee DB.	25	5900	9100	3200	186	68	73	26	30	256	86	10	31	Wis TAU	4 x 6	25.6	L	V F	Zen	Own	Spl	25	6	
42	Moreland RC.	16	2280	3850	5850	2000	180	56	57 1/2	23 1/2			7	32	Her O	4 x 5	25.6	L	G F	Zen	Own	Spl	25	...	
43	Moreland EC.		3780	4590	7590	3000	178	61	58	24 1/2			8 1/2	33	Cont K4	4 1/2 x 5 1/2	27.3	L	V F	Strm	Own	Spl	25	...	
44	Moreland AC.	25	4700	5660	9160	3500	187	68	69	25 1/2			9	34	Cont L4	4 1/2 x 5 1/2	32.5	L	V F	Strm	Own	Spl	25	...	
45	Olds.		2390		128	56	56						10 1/2	35	Own T	3 3/4 x 5 1/2	21.7	H	V F S	Zen	Har	Rm	25	...	
46	Parker B 23 B.	16	1400	2700	4600	1900	131	58	58	30	21	204	66	10	Buda WTU	3 3/4 x 5 1/2	22.5	L	V F	Zen	Own	Wes	35	9	
47	Parker E 24 B.	18	2500	3600	5800	2200	150	58	58	28	25	218	66	10	Wis SU	4 x 5	25.6	H	V F	Strm	Own	Wes	40	10	
48	Perfection CB.	24	4400	5800	8900	3000	227	68 1/2	74 1/2	25 1/2	39	275	87	11	Cont 6B	3 3/4 x 5	33.7	L	V F	Zen	Mod	Eis	35	6	
49	Phila. Motor Coach P	65	6500	8750	14650	5900	216	64 1/2	75	20 1/2	35	334 1/2	90	8	Own 6 cyl.	4 x 6	38.4	H	V F	John	GO	NE	25	5	
50	Reo F.		1185	2705	3360	650	128	56	56	34	22	190	66	10 1/2	Own F	4 1/2 x 5 1/2	27.3	T	V F S	John	Own	NE	45	7	
51	Ruggles Chanticleer.	16	3000	5000		138	56	56	28	27	206	73	10 1/2	10 1/2	Her O	4 x 5	25.6	L	G F	Strm	Per	Rm	35	8	
52	Selden.	4850	7200	10200	3000	195	68	74	29 1/2	33	309	91	7	36	Cont L4	4 1/2 x 5 1/2	32.4	L	V F	Zen	Lng	Eis	25	6.27	
53	Service 61B.	40	5850		192	58	66	30	24	276 1/2	80	8 1/2	8 1/2	37	Buda EBU	4 1/2 x 5 1/2	43.4	L	V F	Strm	McC	Eis	25	4.5	
54	Service 25B.	20	3600		159	56 1/2	57 1/2	28	18	221	65 1/2	8	8	38	Buda WTU	3 3/4 x 5 1/2	33.8	L	V F	Opt	Lng	Rm	35	6	
55	Sterling GB1.																								

BUS SPECIFICATIONS

Car Manufacturer in the Country Was Solicited and the Jobs Listed Are Either Specially Designed Bus mended for This Service

Line Number	ELECTRICAL EQUIPMENT				TRANSMISSION				Universal (Make)	Sprockets (Make)	Brakes (See Note)	FRONT AXLE		REAR AXLE		Type	Total Gear Reduction in High	Total Gear Reduction in Low	Steering Gear (Make)	TIRES, WHEELS, RIMS			
	Battery (Make)	Model No.	Volts and Amp. Hr.	Starter (Make)	Generator (Make)	Clutch (Make)	Make and Model Number of Gearset	Location				Make and Model Number	Final Drive	Make and Model Number	*Pneumatic †Dual Pneumatic ‡Solid					Front	Rear	Wheels (Make)	Rim Equipment
1	Wil	SJRT4	6-111	Del	Rm	B.B.	Cott RU	U	4	Det	A	1540 B	W	6511 S	D	6.8	35.36	Ros	38x7*	36x6†	Bim	Fir	
2	USL	Spec	12-175	Wes	Rm	LN	B-Li 55	U	3	Pet	A	Own	W	Own 2-L	D	8.1	26.66	Ros	34x5*	34x5*	StM	Gdy	
3	POL	613SHC	6-111	GD	Bos	LN	B-Li 55	U	3	Spic	A	Tim 1550	W	Tim 6511	D	6.1	21.3	Ros	34x7*	34x7*	E&O	Fir	
4	POL	613SHC	6-111	GD	Bos	LN	B-Li 55	U	3	Spic	A	Eat 750	W	Eat 1000	D	6.86	21.3	Lav					
5	POL	613SHC	6-111	GD	Bos	LN	B-Li 55	U	3	UP	A	Shel 33FA500	R	Wis 66A	R	7.75	24.8	Lav					
6	POL	613SHC	6-111	GD	Bos	LN	B-Li 55	U	3	UP	A	Shel D 343	R	Wis 88E	R	8.67	41.56	Lav					
7	Exi		12	LN	Bos	LN	B-Li 55	U	4	Spic	A	Tim	W	Tim	D	7.7	37.45	Gem	Opt	Opt	Smi	Hoo	
8	Exi		12	LN	Bos	LN	B-Li 55	U	4	M-E	B	Shul 610 B	W	Clark 3DSp	D	7.7	37.45	Gem			Bud	Fir	
9	POL	611SHC	6-90	Bos	Bos	B-Li	B-Li 55	U	4	M-E	B	Shul 610B	W	Clark 3DSp	D	7.7	37.45	Gem			Bud	Fir	
10	Wil	SJR6	6	Bos	Bos	B-Li	B-Li 51	U	4	UM	A	Tim 1520	W	Tim 6460	D	6.5	34.8	Ros	32x6*	32x6†	Bud	Fir	
11	Wil	SJR6	6	Bos	Bos	B-Li	B-Li 51	U	4	UM	A	Tim 1542	W	Tim 6460	D	6.8	36.4	Ros	32x6	40x8	Bim	Fir	
12	Wil	SJR6	6	Bos	Bos	B-Li	B-Li 51	U	4	UM	A	Tim 1542	W	Tim 6460	D	6	20.2	Ros	32x6	32x6	Bim	Fir	
13	Wil	SJR6	6	Bos	Bos	B-Li	B-Li 51	U	4	UM	A	Tim 1542	W	Tim 6460	D	6	20.2	Ros	32x6	32x6	Bim	Fir	
14	Wil	SJR6	6	Bos	Bos	B-Li	B-Li 51	U	4	UM	A	Tim 1542	W	Tim 6460	D	6	20.2	Ros	32x6	32x6	Bim	Fir	
15	Wil	SJR6	6	Bos	Bos	B-Li	B-Li 51	U	4	UM	A	Tim 1542	W	Tim 6460	D	6	20.2	Ros	32x6	32x6	Bim	Fir	
16	Wil	SJR6	6	Bos	Bos	B-Li	B-Li 51	U	4	UM	A	Tim 1542	W	Tim 6460	D	6	20.2	Ros	32x6	32x6	Bim	Fir	
17	Wil	SJR6	6	Bos	Bos	B-Li	B-Li 51	U	4	UM	A	Tim 1542	W	Tim 6460	D	6	20.2	Ros	32x6	32x6	Bim	Fir	
18	Wil	SJR6	6	Bos	Bos	B-Li	B-Li 51	U	4	UM	A	Tim 1542	W	Tim 6460	D	6	20.2	Ros	32x6	32x6	Bim	Fir	
19	Wil	SJR6	6	Bos	Bos	B-Li	B-Li 51	U	4	UM	A	Tim 1542	W	Tim 6460	D	6	20.2	Ros	32x6	32x6	Bim	Fir	
20	Wil	SJR6	6	Bos	Bos	B-Li	B-Li 51	U	4	UM	A	Tim 1542	W	Tim 6460	D	6	20.2	Ros	32x6	32x6	Bim	Fir	
21	Wil	SJR6	6	Bos	Bos	B-Li	B-Li 51	U	4	UM	A	Tim 1542	W	Tim 6460	D	6	20.2	Ros	32x6	32x6	Bim	Fir	
22	Wil	SJR6	6	Bos	Bos	B-Li	B-Li 51	U	4	UM	A	Tim 1542	W	Tim 6460	D	6	20.2	Ros	32x6	32x6	Bim	Fir	
23	Wil	SJR6	6	Bos	Bos	B-Li	B-Li 51	U	4	UM	A	Tim 1542	W	Tim 6460	D	6	20.2	Ros	32x6	32x6	Bim	Fir	

ABBREVIATIONS

LOCATION OF GEARSET:

- 13 A—Amidships
J—Unit with jackshaft
R—Rear
U—Unit with engine

UNIVERSAL:

- Acm—Acme
Arr—Arrac
Bld—Blood-Brthers
Det—Detroit
Hart—Hartford
KB—Kinsler-Bennett
MM—Mechanics
M-E—Merchant & Evans
Nor—Norwalk
Pet—Cleveland Universal
Pick—Pick
Sned—Snead
Spic—Spicer
Ster—Sterling
Ther—Thermoid
UM—Universal Machine
UP—Universal Products
Var—Varied

SPRINGS:

- Am—Am. Auto Parts
Arm—Armstrong
Bea—Beans
Cham—Champion
Del—Delany
Det—Detroit
GC—Grand City
Har—Harvey
IC—Iron City

Kal—Kalamazoo

- Lab—Lahr
Lig—Liggett
Mar—Maremont
Math—Mather
Mer—Merrill
Nat—National
Pen—Penn
Per—Perfection
Phi—Phila. Springs
P.S.—Point Spring Co.
Row—Rowland
Shel—Sheldon
SP—Spring Perch
Stan—Stan-Par
SS—Standard Steel
Ster—Sterling
Tut—Tutthill
US—United States
Yul—Jenkins Vulcan

BRAKE (LOCATION):

- 16 A—Rear Wheels entirely
B—Drive Shaft and Rear
Wheels
C—Front and Rear Wheel

FRONT AXLE:

- 17 Col—Columbia
Cont—Continental
Dod—Dodge
Flt—Flint
Sals—Salsbury
Shel—Sheldon
Shul—Shul

Tim—Timken Torb—Torbenzen Vul—Vulcan

FINAL DRIVE:

- 18 B—Bevel Gear
C—Chain
I—Internal Gear
P—Spur
R—Double Reduction
S—Spiral Bevel
W—Worm

REAR AXLE (MAKE):

- At—Atlas
Col—Columbia
Clark
Dun—Dunkirk
Eat—Eaton
Flt—Flint
Huck—Huck
IrM—Iron Mt.
LM—L. M. Axle
Russ—Russell
Sals—Salsbury
Shel—Sheldon
Stn—Standard Parts
Thom—Thomson
Tim—Timken
Torb—Torbenzen
Vul—Vulcan
Walk—Walker
Wis—Wisconsin

REAR AXLE (TYPE):

- 20 F—Floating
D—Dead
1/2—Semi-Floating
3/4—3/4-Floating

STEERING GEAR:

- CAS—C. A. S. Products Co.
Dit—Dittler
Dod—Dodge
Gem—Gemmer
Hin—Keystone Hindley
Jac—Jacox
Lav—Lavine
M-F—Muncie Products
Ros—Ross
Sag—Saginaw Products Co.
Wob—Wohlrab

WHEELS:

- 22 Arc—Archibald
AuW—Auto Wheel
Bim—Bimel
Bud—Budd
Cla—Clark
C&M—Crane & McMahon
Day—Dayton
Det—Detroit
Dis—Disteel
E&O—Eberly & Oris
Hay—Hayes
Hoo—Hoopes Brothers
Imp—Imperial
Ind—Indestructible
Jon—Jones

Kel—Kelley

- MM—Michigan Malleable
Iron
Mot—Motor Wheel
Mun—Muncie Wheel
Mut—Mutual
Nor—Northern
Pru—Prudden
Roy—Royce
Sch—Schwartz
Smi—Smith
Sta—Stanwell
StM—St. Mary
Stn—Standard
Wal—Walker
Way—Wayne
Whit—Whitcomb
W-L—Waterhouse & Lester

RIM EQUIPMENT:

- 23 StM—St. Mary
Stn—Standard
Wal—Walker
Way—Wayne
W-L—Waterhouse & Lester
Bak—Baker
Cle—Cleveland
Det—Detroit
Fir—Firestone
Gdy—Goodyear
Hay—Hayes
Jac—Jackson
Jax—Jaxon
Kel—Kelley
Mil—Miller

In This Table Are Invited to Send in Their Specifications

Manufacturers and Models Included in Specifications on Preceding Pages

Also Manufacturers of Busses as Listed in the Bus Table

Truck Manufacturers Who Distribute Nationally

Note: This grouping of the manufacturers has been made from the best information at hand. Manufacturers are invited to furnish us with further information in relation to their distribution which will enable us to make this grouping as correct as possible.

Acme—1, 1½, 2, 3, 3½, 4½, 6½—Acme Motor Truck Co., Cadillac, Mich.
 American-LaFrance—¾, 2½, 3½, 5—American-LaFrance Fire Engine Co., Inc., Elmira, N. Y.
 Armleder—1, 1½, 2½, 3½—O. Armleder Motor Truck Co., Cincinnati, Ohio.
 Atterbury—1½, 2½, 3½, 5—Atterbury Motor Car Co., Buffalo, N. Y.
 Autocar—1, 1½, 1½, 2, 2½, 3, 4, 5 to 7—Autocar Co., Ardmore, Pa.
 Bessemer—1, 1½, 2½, 4—Bessemer Motor Truck Co., Grove City, Pa.
 Bethlehem—1, 2, 3—Bethlehem Motors Corp., Allentown, Pa.
 Brockway—¾, 1, 1½, 2½, 3½, 5—Brockway Motor Truck Co., Cortland, N. Y.
 C. T.—1, 1½, 2, 3½, 5—Commercial Truck Co., Philadelphia, Pa.
 Chevrolet—½, 1—Chevrolet Motor Truck Co. of Mich., Flint, Mich.
 Clydesdale—1½, 2½, 3½, 5, 7—Clydesdale Motor Truck Co., Clyde, Ohio.
 Commerce—¾, 1½, 2½—Commerce Motor Truck Co., Ypsilanti, Mich.
 Day-Elder—1, 1½, 2, 2½, 3½, 5—Day-Elder Motors Corp., Newark, N. J.
 Defiance—1½, 1½, 2, 3—Defiance Motor Truck Co., Defiance, Ohio.
 Diamond T—¾, 1½, 1½, 2½, 3½, 5—Diamond T Motor Car Co., Chicago, Ill.
 Dodge—¾—Dodge Bros., Detroit, Mich.
 Duplex—1, 1½, 2, 3½—Duplex Truck Co., Lansing, Mich.
 F. W. D.—3—Four-Wheel Drive Auto Co., Clintonville, Wis.
 Fageol—2, 3, 4, 5—Fageol Motors Co., Oakland, Cal.
 Federal—¾, 1, 1½, 2, 3½, 5, T.T.—Federal Motor Truck Co., Detroit, Mich.
 Fifth Avenue—Fifth Avenue Coach Co., New York City.
 Ford—1—Ford Motor Co., Highland Park, Mich.
 G. M. C.—1, 2, 3½, 5—General Motors Truck Co., Pontiac, Mich.
 Garford—1, 1½, 2½, 4, 5, 7½—Garford Motor Truck Co., Lima, Ohio.
 Gary—1, 2, 2½, 3½, 5—Gary Motor Corp., Gary, Ind.
 Graham—1, 1½—Graham Brothers, Evansville, Ind.
 Gramm-Bernstein—1, 1½, 1½, 2, 2½, 3½, 4, 5—Gramm-Bernstein Motor Truck Co., Lima, Ohio.
 Gray—¾, 1—Gray Motor Corp., Detroit, Mich.
 Indiana—1, 1½, 2, 2½, 3½, 5—Indiana Truck Corp., Marion, Ind.
 International—¾, 1, 1½, 2, 2½, 3, 5—International Harvester Co. of America, Chicago, Ill.
 Kelland—¾, ¾, 1—Kelland Motor Car Co., Newark, N. J.
 Kelly-Springfield—1½, 2½, 3½, 6—Kelly-Springfield Motor Truck Co., Springfield, Ohio.
 Kissel—1, 1½, 2½, 4—Kissel Motor Car Co., Hartford, Wis.
 Krebs—1, 1½, 2½, 3½—Krebs Motor Truck Co., Bellevue, Ohio.
 Lansden—¾, 1, 2, 3½, 5, 6—Lansden Company, Danbury, Conn.
 Larrabee-Deyo—1, 1½, 2, 3½, 5—Larrabee-Deyo Motor Truck Co., Inc., Binghamton, N. Y.
 Maccar—1½, 1½, 2, 3, 4, 5—Maccar Truck Co., Scranton, Pa.
 Mack—1½, 2, 2½, 3½, 5, 6½, 7½, T.T.—Mack Motors, Inc., New York, N. Y.
 Mason Road King—1—Durant Motors, Inc., Long Island City, N. Y.
 Maxwell—1½—Maxwell Motor Co., Inc., Detroit, Mich.
 Menominee—1, 1½, 1½, 2, 3½, 5—Menominee Motor Truck Co., Clintonville, Wis.
 Nash—1, 2—Nash Motors Co., Kenosha, Wis.
 Northway—2, 3½—Northway Motors Corp., Natick, Mass.
 O. B.—1, 2, 3, 5—O. B. Electric Vehicles, Inc., Long Island City, N. Y.
 Oshkosh—2, 2½—Oshkosh Motor Truck Mfg. Co., Oshkosh, Wis.
 Overland—½—Willys-Overland Co., Toledo, Ohio.
 Patriot—1, 2, 3—Patriot Mfg. Co., Havelock, Neb.
 Penn—1, 2—Penn Motors Corp., Philadelphia, Pa.
 Pierce-Arrow—2, 3, 4, 5, 6, 7½, T.T.—Pierce-Arrow Motor Car Co., Buffalo, N. Y.
 Reo—1½—Reo Motor Car Co., Lansing, Mich.
 Republic—1½, 2, 3, 4—Republic Motor Truck Co., Inc., Alma, Mich.
 Rowe—2, 2½, 3, 4, 5—Rowe Motor Mfg. Co., Lancaster, Pa.
 Ruggles—¾, 1½, 2, 2½—Ruggles Motor Truck Co., Saginaw, Mich.
 Schacht—1½, 2, 3, 4, 5—G. A. Schacht Motor Truck Co., Cincinnati, Ohio.
 Selden—1½, 2½, 3½, 5—Selden Truck Corp., Div. of Industrial Motor Corp., Rochester, N. Y.
 Service—1½, 1½, 3, 3½, 4—Service Motor Truck Co., Wabash, Ind.
 Signal—1, 1½, 2½, 3½, 5—Signal Truck Corp., Detroit, Mich.
 Standard—1½, 1½, 2½, 3½, 5—Standard Motor Truck Co., Detroit, Mich.
 Sterling—1½, 2, 2½, 3½, 5, 7½—Sterling Motor Truck Co., Milwaukee, Wis.
 Stewart—1, 1½, 1½, 2½, 3½—Stewart Motor Corp., Buffalo, N. Y.
 Transport—1, 1½, 2, 3, 3½, 5—Transport Truck Co., Mt. Pleasant, Mich.
 Traylor—1½, 2, 3, 5—Traylor Eng. & Mfg. Co., Cornwells, Pa.
 United—1, 1½, 2, 2½, 3½—United Motor Products Co., Grand Rapids, Mich.
 Walker—½, 1, 2, 3½, 5—Walker Vehicle Co., Chicago, Ill.
 Ward—2, 2½, 3½, 5, 7, 10, 14—Ward Motor Vehicle Co., Mt. Vernon, N. Y.
 White—¾, 2, 3½, 5—White Co., Cleveland, Ohio.
 Yellow Cab—¾, 1½—Yellow Cab Mfg. Co., Chicago, Ill.

Truck Manufacturers Who Distribute Locally

Acason—2, 3, 4, 5—The Acason Corp., Detroit, Mich.
 Ace—1½, 3—American Motor Truck Co., Newark, Ohio (receiver).
 American—2½, 4, 5—American Motor Truck & Tractor Co., Portland, Conn.
 Available—1½, 2, 2½, 3½, 5—Available Truck Co., Chicago, Ill.
 Belmont—1, 2, 3—Belmont Motors Corp., Harrisburg, Pa.
 Betz—1, 2½—Betz Motor Truck Co., Hammond, Ind.
 Brinton—1½, 2½—Brinton Motor Truck Co., Philadelphia, Pa.
 Buffalo—2, 3—Buffalo Truck and Tractor Corp., Clarence, N. Y. (receiver).
 Casco—1—Casco Motors, Inc., Portland, Maine.
 Chicago—1½, 2½, 3½, 5—Chicago Motor Truck, Inc., Chicago, Ill.
 Clinton—1½, 2, 3, 4, 5 to 7—Clinton Motors Corp., Reading, Pa.
 Columbia—1½, 2½, 3—Columbia Motor Truck Co., Pontiac, Mich.
 Concord—1, 2, 2½, 3—Abbott-Downing Truck & Body Co., Concord, N. H.
 Corbitt—¾, 1, 1½, 2, 2½, 3, 4, 5—Corbitt Motor Truck Co., Henderson, N. C.
 Dependable—1½, 2, 2½, 3, 3½—Dependable Truck & Tractor Co., East St. Louis, Ill.
 Diehl—1, 1½—Diehl Motor Truck Works, Philadelphia, Pa.
 Dixon—1½, 2, 2½, 3½—Dixon Motor Truck Co., Altoona, Pa.
 D-Olt—1, 1½, 2, 2½, 5—D-Olt Motor Truck Co., Inc., Long Island City, N. Y.
 Dorris—1, 2, 3½—Dorris Motor Car Co., St. Louis, Mo.
 Eagle—1½, 2—Eagle Motor Truck Corp., St. Louis, Mo.
 Fulton—1, 2—Fulton Motors Corp., Farmingham, N. Y.
 G. W. W.—1½—Wilson Truck Mfg. Co., Henderson, Iowa.
 Gotfredson—1, 1½, 2½, 4, 5—Gotfredson Truck Corp., Ltd., Walkerville, Ont.
 Grass Premier—1, 1½, 2, 2½, 3½—Grass Premier Truck Co., Sauk City, Wis.
 Guilder—1½, 2, 3—Guilder Engineering Co., Poughkeepsie, N. Y.
 Harvey—2, 2½, 3½, 6, 10—Harvey Motor Truck Co., Harvey, Ill.
 Hawkeye—1, 1½, 2½, 3½—Hawkeye Truck Co., Sioux City, Iowa.
 Hug—1½, 2—The Hug Co., Highland, Ill.
 Hurlburt—1½, 2½, 3½, 5, 7—Harrisburg Mfg. & Boiler Co., Harrisburg, Pa.
 Independent—1, 1½, 2½—Independent Motor Truck Co., Inc., Davenport, Ia.
 Jumbo—1½, 2, 2½, 3, 3½, 5—Nelson Brothers Co., Saginaw, Mich.
 Kalamazoo—Kalamazoo Motor Corp., Kalamazoo, Mich.
 Kearns—1, 1½, 2, 3½, 5—Kearns-Dughe Motors Co., Danville, Pa.
 Kenworth—1½, 2½, 3½—Kenworth Motor Truck Corp., Seattle, Wash.
 Kimball—2, 2½, 4, 5—Kimball Motors Corp., Los Angeles, Cal.
 King Zeitler—¾, 1, 1½, 2½, 3½, 5—King Zeitler Co., Chicago, Ill.
 Kleiber—1½, 2½, 3½, 5—Kleiber Motor Truck Co., San Francisco, Cal.
 Lange—2½, 3½—Lange Motor Truck Co., Pittsburgh, Pa.
 Luedinghaus—1, 1½, 2, 3½, 5, 7—Luedinghaus-Espenschied Wagon Co., St. Louis, Mo.
 Master—1½, 1½, 2½, 3½, 5, 5½—Master Motors Corp., Chicago, Ill.
 Moreland—1, 1½, 2, 3, 5—Moreland Motor Truck Co., Burbank, Cal.
 National—1, 1½, 2½, 3½, 5—National Steel Car Corp., Ltd., Hamilton, Ont., Canada.
 Nelson-LeMoon—1, 1½, 2½, 3½, 5—Nelson & LeMoon, Chicago, Ill.
 Netco—2, 2½, 3—New England Truck Co., Fitchburg, Mass.
 Noble—1, 1½, 2, 2½, 3½—Noble Motor Truck Co., Kendallville, Ind.
 Ogden—1, 1½, 2½, 3½, 5—Ogden Truck Co., Chicago, Ill.
 Old Reliable—2½, 3½, 5, 6—Old Reliable Motor Truck Co., Chicago, Ill.
 Olympic—2½—Olympic Motor Truck Co., Tacoma, Wash.
 Oneida—2, 2½, 3½, 5—Oneida Motor Truck Co., Green Bay, Wis.
 Parker—1, 1½, 3, 3½, 5—Parker Motor Truck Co., Milwaukee, Wis.
 Perfection—¾, 1½, 2, 3, 4½, 5—Perfection Truck Co., Minneapolis, Minn.
 Philadelphia Motor Coach—Phila. Motor Coach Co., Phila., Pa.
 Pioneer—1—Pioneer Truck Co., Chicago, Ill.
 Pittsburgher—2, 3, 3½—Pittsburgh Truck Mfg. Co., Pittsburgh, Pa.
 Power—1½, 2½, 3½—Power Truck & Tractor Co., St. Louis, Mo.
 Rainier—¾, 1, 1½, 2, 2½, 3½, 5—Rainier Motor Corp., Long Island City, N. Y.
 Reynolds—2, 3—Reynolds Truck Co., Mount Clemens, Mich.
 Sandow—1, 1½, 2½, 3½, 5—Moses & Morris Motors Corp., Chicago, Heights, Ill.
 Sanford—1, 1½, 2½, 3½, 5—Sanford Motor Co., Syracuse, N. Y.
 Steinmetz—Steinmetz Electric Motor Car Corp., Arlington, Baltimore, Md.
 Stoughton—1½, 1½, 2, 3—Stoughton Wagon Co., Stoughton, Wis.
 Super Truck—2½, 5—O'Connell Motor Truck Co., Waukegan, Ill.
 Traffic—1½, 2, 3—Traffic Motor Truck Corp., St. Louis, Mo.
 Triangle—1, 1½, 2, 2½—Triangle Motor Truck Co., St. Johns, Mich.
 Twin City—2, 2½—Minneapolis Steel & Machinery Co., Minneapolis, Minn.
 Ultimate—1½, 2, 2½, 3, 5—Vreeland Motor Co., Inc., Newark, N. J.
 Union—2½, 4—Union Motor Truck Co., Bay City, Mich.
 U. S.—1½, 1½, 2½, 3, 4, 5—United States Motor Truck Co., Cincinnati, Ohio.
 Velie—1½—Velie Motors Corp., Moline, Ill.
 Wachusett—1, 1½, 2, 2½—Wachusett Motors, Inc., Fitchburg, Mass.
 Walker Johnson—1, 2½—Walker Johnson Truck Co., Woburn, Mass.
 Walter—2, 2½, 5, T.T.—Walter Truck Co., New York, N. Y.
 Ward La France—2½, 3½, 5—Walker Motors, Inc., New York, N. Y.
 Wichita—1, 2, 3, 4—Wichita Falls Motor Co., Wichita Falls, Texas.
 Wilcox—1, 1½, 2½, 3½, 5—Wilcox Trux, Inc., Minneapolis, Minn.
 Witt-Will—1½, 2, 2½, 3—Witt-Will Co., Inc., Washington, D. C.

Preliminary Facts and Figures of the Automobile Industry for 1923

By ALFRED REEVES, General Manager National Automobile Chamber of Commerce

Motor Bus and Motor Truck

Number of motor busses in use	51,000
Number of consolidated schools using motor transportation	12,500
Number of street railways using motor busses	107
Number of railroads using motor vehicles on short lines	157

Production

Cars and trucks	4,014,000
Cars	3,644,000
Trucks	370,000
Previous record motor vehicle production, 1922	2,659,064
Percentage increase over 1922	50%
Production of closed cars	1,235,000
Per cent closed cars	35%
Total wholesale value of cars	\$2,243,385,000
Total wholesale value of trucks	\$267,500,000
Total wholesale value of cars and trucks	\$2,510,885,000
Tire production	45,000,000
Wholesale value of motor vehicle tire business	\$760,000,000
Total wholesale value of parts and accessories, exclusive of tires	\$1,310,000,000
Average retail price of car, 1923	\$811
Average retail price of truck, 1923	\$1,080
Purchasing power of automobile dollar (1913=100)	111 cents
Number of persons employed in motor vehicle and allied lines	2,750,000
Special Federal excise taxes paid to U. S. Government by automobile industry in 1923	\$155,000,000

Registration

Motor vehicles registered in U. S. (approx.)	14,500,000
Motor cars	12,880,000
Motor trucks	1,620,000
World registration of motor vehicles	17,000,000
Per cent of world registration owned by U. S. A.	85%

Motor vehicle registration on farms ..	4,250,000
Motor cars	3,890,000
Motor trucks	360,000
Miles of improved highway	430,000
Total miles of highway in U. S.	2,941,294

Automobile's Relation to Other Business

Number of carloads of automobiles, parts, and tires shipped over railroads	750,000
Per cent of rubber supply used by automobile industry	70%
Per cent of plate glass supply used by automobile industry	36%
Per cent of copper supply used by automobile industry	14%
Per cent of aluminum supply used by automobile industry	25%
Per cent of iron and steel supply used by automobile industry	4%
Per cent of upholstery leather supply used by automobile industry	54%
Gasoline consumed by motor vehicles, 1923 (gals.)	5,404,184,000

Exports

Number of motor vehicles exported..	328,333
(From U. S. factories and Canadian plants owned in U. S. A.)	
Number of motor cars exported..	189,884
Number of motor trucks exported ..	37,049
Number of assemblies abroad of American cars	101,400
Value of motor vehicles and parts exported	\$234,129,000
(Including engines and tires)	
Rank of automobiles and parts among all exports	6th
Per cent of motor vehicles exported..	8%
Imports of motor vehicles	890

Motor Vehicle Retail Business in United States

Total car and truck dealers	43,607
Public garages	50,911
Service stations and repair shops	67,802
Supply stores	65,988

Ford to Build Factory on Pacific Coast

Fifteen acres of land on the water front at Oakland Calif., have been purchased by the Ford Motor Co., of Detroit. Work will start soon on the construction of a factory of 4000 car capacity. A proposal has been submitted to the government to deepen the inner channel of the estuary to provide a waterway, it was learned.

Recent Motor Truck Price Changes

Gary Motor Corp., Gary, Ind.

1 ton from \$1775 to \$1875
2 ton from \$2550 to \$2750
2½ ton from \$3050 to \$3250

Lange Motor Truck Co., Pittsburgh, Pa.

3½ ton from \$4495 to \$4450

Oshkosh Motor Truck Mfg. Co., Oshkosh, Wis.

2 ton (Model AW) from \$2885 to \$3080
2 ton (Model AAW) from \$2985 to \$3180
2½ ton (Model BO) from \$3685 to \$3875
2½ ton (Model BBO) from \$3785 to \$3975

Schmidt Made Chicago Representative of N. A. C. C.

Another addition to the staff of the National Automobile Chamber of Commerce was made recently, in the appointment of I. Walton Schmidt as district representative in the Chicago territory. Mr. Schmidt will make investigations for the industry on economic and market conditions.

Motor Rodeo Provokes Interesting Highway Discussion

EVERY town of 5000 population and many smaller communities, reaching 85 to 90 per cent of the country population, will be directly served by the Federal-aid system of highways now being developed, according to T. H. MacDonald, Chief of the U. S. Bureau of Public Roads, speaking at the the Motor Rodeo Dinner of the National Automobile Chamber of Commerce in the Hotel Plaza, New York City, Jan., 4th.

Mr. MacDonald brought out the fact that the road system is being planned by state and government officials on an earning capacity basis. Highways are being constructed of such surfaces and in such locations as will render an economic value equal to or exceeding the investment required.

He also noted that 40 per cent of our billion dollar expenditures each year for

One of the innovations of the Rodeo was a series of questions formulated to provoke instructive discussions on a number of the leading problems in the automotive industry. Mr. MacDonald presided over these discussions and guests were invited to join in the formal round table.

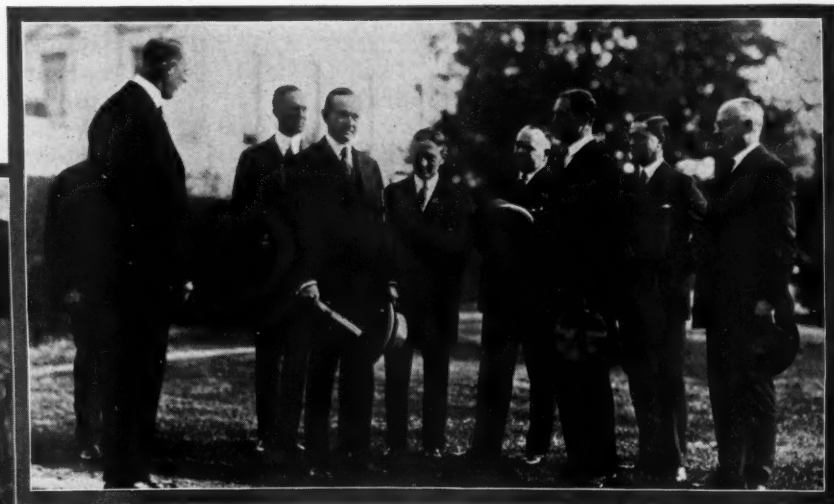
The questions covered were as follows: "Will They Walk?" The story of the saturation point. "Where Shall I Park My Car?" A picture of changing cities. "Have Our Roads Been Spurious Venues?" The effect of motor trucks on

Commissioner of Connecticut; George M. Graham, Chandler Motor Car Co.; Alvan Macaulay, Packard Motor Car Co.; A. J. Brosseau, International Motor Co.; A. R. Erskine, Studebaker Corp. of America; Thomas MacDonald, U. S. Bureau of Public Roads.

The gathering saw the first public showing of the Highway Film, taken under the direction of the U. S. Bureau of Public Roads, the Highway Education Board, the Ford Motor Company, the National Automobile Chamber of Commerce.



Talking over the local road situation. Frank Matthews and Raymond Harsch as father and son in the highway motion picture, recently produced by the U. S. Bureau of Public Roads, the Highway Education Board, the Ford Motor Company and the National Chamber of Commerce.



President Coolidge awards the scholarship to Raymond Harsch who takes the part of Robert Preston in the highway motion picture. Surrounding them in the White House grounds are members of the Highway Education Board. On the left is John J. Tigert, U. S. Commissioner of Education; behind the President Col. Henry C. Jewett, U. S., Q. M. C., President Coolidge, H. S. Firestone, Thomas H. MacDonald, Raymond Harsch, Roy D. Chapin, and Dean F. L. Bishop, Highway Education Board.

roads is being devoted to the major or Federal-aid system, and that 60 per cent is being paid out for local feeder routes.

The total amount collected from motor vehicles by the Federal government since the starting of the Federal-aid program in 1917 has amounted to \$589,000,000, while the Federal-aid road expenditure has been \$264,000,000. Thus Mr. MacDonald pointed out as far as the major or Federal-aid system including the money paid by the states is concerned, the amount taken from general taxation is negligible, and the roads are a permanent asset to the community.

"The motor vehicle," said Mr. MacDonald, "not only through itself, but through its potential and true earnings, is more than supporting the highway program."

Arthur Baer ("Bugs" Baer) spoke on "What I Don't Know About Highways."

highways. "Lose a Minute Save a Life." What is being done to prevent highway accidents. "Who Pays?" Is it your dollar or mine that builds the road? "Who's Your Neighbor?" We used to speak in acres, now we speak in miles. "How Many Colloids Has Your Road?" What makes a highway and why? "Blazing New Trade Routes." The Pan American Mission. An experiment in road work. "Putting the Bus Into Business." Co-ordinated traffic in our big cities. "Green Lands and Terminals. A new departure in railroad operation made possible by trucks.

Among those taking part in the discussions were: Alfred Reeves, of the National Automobile Chamber of Commerce; J. N. Mackall, chief engineer of the State Roads Commission of Maryland; John A. MacDonald, State Highway

The occasion of the dinner was to supply information on the progress in the development of roads and the determining of highway taxation, financing, regulation and other problems which have developed within the past year. Editors of leading magazines and special writers were the guests of the occasion, and there was general discussion on the points involved.

Roy D. Chapin, vice-president of the motor organization, presided. The dinner was under the auspices of the Highways Committee, of which Mr. Chapin is chairman, and of the Traffic Planning and Safety Committee, of which George M. Graham is chairman. Mr. Graham announced that the Chamber is starting a national survey of causes of motor accidents to be followed by a campaign to remove these causes.

Personal Items

Ernest A. Bennett has been made manager of the newly established branch of the Olds Motor Works, at Memphis, Tenn. The Memphis Oldsmobile branch will have supervision over western Tennessee, southwestern Kentucky, Mississippi and Arkansas.

Fred C. Burnett, former sales manager for the C. N. & F. W. Jonas Co., automotive parts sales organization, Chicago, has been appointed sales manager of the jobbing division of the Federal Pressed Steel Co., of Milwaukee. His headquarters will be at 1202 London Guarantee & Accident Bldg., Chicago.

W. T. Calerdine, prominent jobber and importer of Cincinnati and former president of the Ohio Good Roads Federation, has accepted the chairmanship of the Good Roads Board of the American Automobile Association. He succeeds Henry G. Shirley, resigned.

C. P. Clark has been appointed district representative for the National Automobile Chamber of Commerce on the Pacific Coast. He will divide his time between Los Angeles, San Francisco and the other large cities of the three farthest west states. His work will include analysis of economic and market conditions.

E. E. Clayton, with the Union Motor Co., of Houston, Texas, for the past five years, has been made sales manager of the company. He has charge of both the new and used car departments.

George W. Daum, assistant general manager of the Pennsylvania Rubber Co., Jeanette, Pa., who has been associated with the company for the last 14 years, has been elected vice-president of the company.

John H. Earle, formerly sales manager for the Huck Axle Corp., of Chicago, has resigned his connections with that concern to become eastern sales manager for Fuller & Sons Manufacturing Co., Kalamazoo, Mich.

F. E. Holcomb has tendered his resignation as president and general manager of the Williams Foundry & Machine Co., of Akron, Ohio. His future plans have not been announced.

E. Z. Jones has resigned as sales manager of the Anderson Motor Co. He was formerly with the Winther Motor Truck Co., and the Kissel Motor Car Co.

Richard P. Joy, president of the National Bank of Commerce, Detroit, has been elected treasurer of the Packard Motor Car Co., to succeed F. R. Robinson, resigned. **M. A. Cudlip**, formerly assistant secretary, was appointed to the office of secretary. The old board was re-elected.

Floyd A. Knight, formerly with the Berkshire Products Corp., has resigned and accepted a position with the Grigsby-Grunow-Hinds Co., of Chicago, as sales manager of the east central district, with headquarters at Cleveland.

R. W. Lytle, for seven years assistant chief engineer of the Stevens Motor Car Co., in charge of chassis and engine design has joined the Formica Insulation Co., Cincinnati, Ohio, as service engineer, whose duty it will be to assist manufacturing customers using Formica gear blanks in getting the most out of the material.

R. L. Marshall has been appointed manager of the Dallas, Texas, branch of the Dunlop Tire & Rubber Co., of Buffalo. His territory will cover Texas, Oklahoma, Arkansas and part of Louisiana.

G. B. McCann has been appointed personal assistant to C. F. Kettering, president of the General Motors Research Corp. Mr. McCann was treasurer of the Dayton Engineering Laboratories Co., having been with that company since its organization.

J. P. Reis, president and general manager of the Eagle Motor Truck Co., has been elected chairman of the Commercial Car Bureau of the St. Louis Automobile Dealers' Assn. He succeeds C. E. Lightfoot, of the Diamond T Co., who has resigned.

Ernest Sanger has resigned as sales manager of the Michigan Lubricator Co., to open his own sales office from which he will handle several accounts for manufacturers selling to the automotive field.

George Drake Smith, formerly vice-president and sales manager for the Winther Motors Co., is now engaged in selling securities for the Delmore Motors Corp. of New York City, of which he is president. This company is planning to build a 3-wheel delivery vehicle known as the Parcelmobile.

B. V. Unwin has been appointed sales manager of the Hinkley Motors, Inc. He succeeds **C. A. Neville**, who has resigned to become sales manager of the Caravan Motors Corp., transportation engineers and truck and equipment distributors on the Pacific Coast. Mr. Neville will also act as resident manager for the Hinkley Co.

Don F. Whittaker has resigned as secretary and general manager of Motor Truck Industries, Inc., to become zone sales manager for the Haynes Automobile Co., in eastern and middle western territory. His territory will cover Ohio, West Virginia, Virginia, Pennsylvania and part of New York state.

Trade Changes

Louis J. Ziesel Co., 268 Market St., San Francisco, Cal., has been made Pacific Coast and Mountain states representative to the jobbing trade for the Perfex Ford replacement radiator, manufactured by the Racine Radiator Co., Racine Wis.

The Van Dorn Iron Works Co., of Cleveland, has opened a factory branch office at 167 Monroe St., Chicago, for taking care of the increasing number of Van Dorn dump body and hoist users in that territory. The branch will be in charge of J. B. Hunter, who has had long factory experience with the company.

The Cleveland Hammered Piston Ring Co., has moved to 1206 S. Grove St., Irvington, N. J., combining with the U. S. Hammered Piston Ring Co.

The Electric Storage Battery Co., has started work on a new building at Vandeventer and Chouteau Ave., S., St. Louis. This is the third building that the company has occupied since a branch was opened in that city in 1907.

The Union Supply Co., of Toledo, Ohio, recently celebrated the opening of its new quarters at 27-29-31 Superior St. The company was founded in 1899 by its present owners and is one of the leading automotive jobbing and retail stores in that section.

The Selden Sales & Service Co., of New York, is moving to its new sales and service building located at VanAlst Ave. and Marion St., Long Island City. The new building has every modern equipment and affords excellent servicing facilities.

The Haywood Tire & Equipment Co., has moved its executive offices and general warehouse to 1317-1325 S. Oakley Ave., Chicago, Ill. The company was formerly at Indianapolis.

The Cincinnati Automobile Dealers' Association has moved its executive offices to 714 Provident Bank Bldg., Cincinnati. Harry T. Gardiner is still in charge as general manager.

Literature

Better Retailing, an exhaustive study of the problems confronting retail stores selling a stable line of merchandise. Such subjects are covered as: Store Organization and System; Dividing Your Store Into Departments; Increasing Profit by Increasing Turnover; Buying; Advertising; Selling Goods Through Window Display; Are Your Clerks Profitable?; Making People Want to Trade With You, etc. A book that can be used to great advantage by the retail accessory dealer. Sent on request by the National Cash Register Co., of Dayton, Ohio.

The Curtis Pneumatic Machinery Co., St. Louis, has issued a folder calling attention to the fact that 70 years ago, 39 years before the first motor car, the Curtis company was organized.

Mechanics of the Gasoline Engine, by H. A. Huebotter, M. E. A presentation of the principles of engine design that will aid the designer to lay out an engine that is said to be structurally correct, i. e., the parts of which are proportioned for the loads that will be put upon them and constructed of the proper materials. Every part of the gasoline engine with the exception of the carburetor and the ignition system is analyzed. 313 pages, 6 x 9, 153 illustrations. Price \$4. McGraw-Hill Book Co., Inc., 370 7th Ave., New York City.

Advertising for the Retailer—A comprehensive volume on retail advertising prepared in the Extension Division of the University of Wisconsin, by Lloyd D. Herrold. The automotive merchant who writes his own advertising copy can profit greatly by this practical book. D. Appleton and Company, New York.

The North East Electric Co., Rochester, N. Y. has just published a catalog describing its starting, lighting and ignition equipment for motor busses. The catalog lists the generators of from 125 to 600 watt capacities as well as heavy-duty starting motors, ignition units, regulators and other automotive equipment which it manufactures. Free on request.

The Alexander Milburn Co., 1416 W. Baltimore, Baltimore, Md., announces two new catalogs, one on Milburn Welding and Cutting Apparatus and the other on Milburn Carbide Lights. Catalogs will be sent free on request.

The Burgess-Norton Mfg. Co., Geneva, Ill., announces the publication of a 40-page catalog describing in most minute detail, the complete line of B-N piston pins. The company has also prepared an attractive wall chart which gives valuable information along this line for garages, repairmen and dealers.

The Essentials of Self-Protection Against Fire, is the title of an interesting pamphlet prepared by the Foamite-Childs Corp., Utica, N. Y. Of interest to all those who are interested in cutting down the fire hazard in their establishment.

Industrial Publishing. A clear, concise and practical treatise on the "business of producing periodicals devoted exclusively to single industries or trades or to classes of persons having common business or other interests," by Horace M. Swetland, president of the United Publishers Association, Inc. Based on the lessons of an educational course in industrial publishing, the book has a logical procedure that makes it excellent for class-room use. However, the book can be profitably read by any one interested in the publishing business and particularly in the romance of the industrial press. Sole selling agents for this work are the U. P. C. Book Co., Inc., 239 W. 39th St., New York City.



SERVICE AND REPAIR DEPARTMENTS



The Well-Equipped Shop in the Small Town

It's the Well-Equipped Shop After All That Gets the Business, No Matter Where Located

By C. P. SHATTUCK

IT is frequently asserted that the truck dealer in the small community should not be expected to render high grade service because the necessary investment in time and labor-saving tools and equipment would not be in keeping with his capital invested. In other words, his net profits are not sufficient to warrant purchasing complete shop equipment. But, despite these contentions, there are dealers in small service stations who are well equipped and who render real service and make a profit.

There is a truck dealer in Greenwich, Conn., who has a service station with machinery and equipment that would do credit to any large city station. Greenwich is about 20 miles from New York City by rail and about the same distance by road. It is on the main highway, going through Stamford, Bridgeport and New Haven, on which there is considerable truck traffic. Greenwich is a residential town, all business practically being confined to neighborhood stores. These facts are mentioned because Greenwich does not afford the usual opportunities for truck sales.

There is another reason, perhaps, why this dealer does not make as many sales as some dealers but this is explained in another article in this issue. This article deals with the service station.

The service station is on the second floor of a cement and concrete building. With the exception of the parts section, the entire second floor is given over to service. The ground floor is used partially for minor repairs and adjustments. A large elevator carries trucks to the service floor which, with the exception of a few posts, is free from partitions or obstructions. Incoming trucks can be run direct from the elevator to the overhead trolley and hoist when a heavy unit is to be removed from the chassis. If a unit requires considerable overhauling the chassis can be moved to one side out of the way by means of the trolley and hoist. If the rear axle has been removed the

chassis is moved by roller type jacks. This permits handling another job in the disassembly section, by means of the trolley and hoist.

As may be noted by the accompanying sketch of the floor plan, the overhead trolley rail extends from the forge department to about half way across the room. This allows one mechanic to

remove a heavy unit and roll it along to either of the two work benches. Similarly the unit can be placed on a movable stand and rolled to the machine shop if machine work is required.

The hoist is a Yale & Towne, of sufficient capacity to handle the heaviest truck units as well as to carry the front or rear end of a truck. Maintenance records in

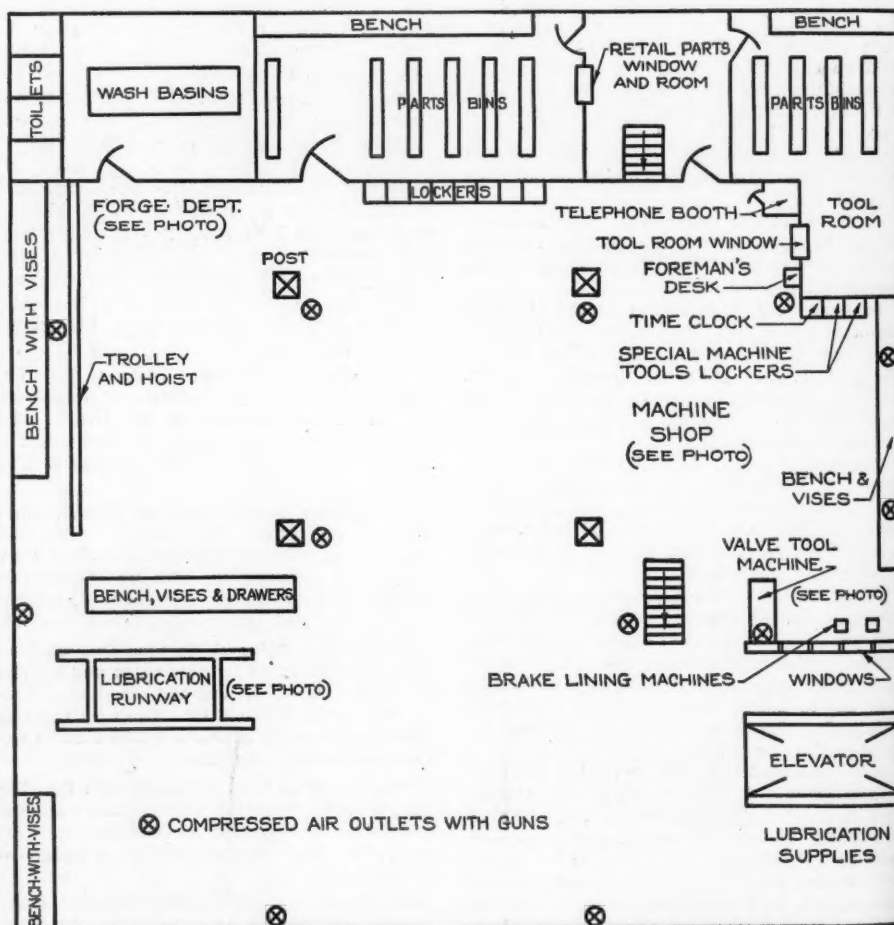
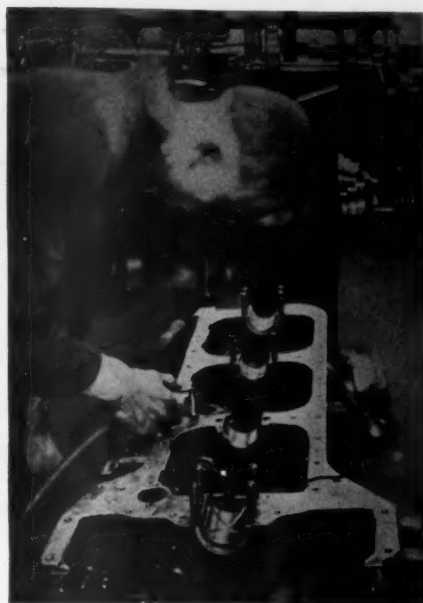


Diagram Showing Layout of Shop Equipment. Note the Liberal Use of Compressed Air Outlets

this service station show that the hoist has affected a considerable saving in time, which means that the **cost to the truck owner is considerably less**, without reducing the net profit on the job. With the hoist the $\frac{3}{4}$ -ton truck engine is removed from the frame in 15 minutes. This is with the connections clear. The time is that required to swing the hoist over the job, attach the hooks and chain to the unit, and swing it on to bench or stand. Under the old methods it required at least five men from 45 to 60 minutes, and with the heavier truck units more men were required. The shop saves 4 hrs. and 45 min. and the customer is charged considerably less. Nearly \$6 is saved, not all of which is given to the customer, but a generous portion is, because the hoist and trolley have been in service for some time and the cost has been practically charged off. The equipment is still an asset from a financial or inventory point of view.

Plenty of Compressed Air Outlets

Next in importance from an efficiency standpoint is the use of compressed air. As may be noted by the diagram, there are compressed air outlets with hose and Lunkenheimer air guns at the various benches and posts. Instead of the usual time and material wasting methods of it



Showing a Mechanic Using Compressed Air to Clean a Crankcase

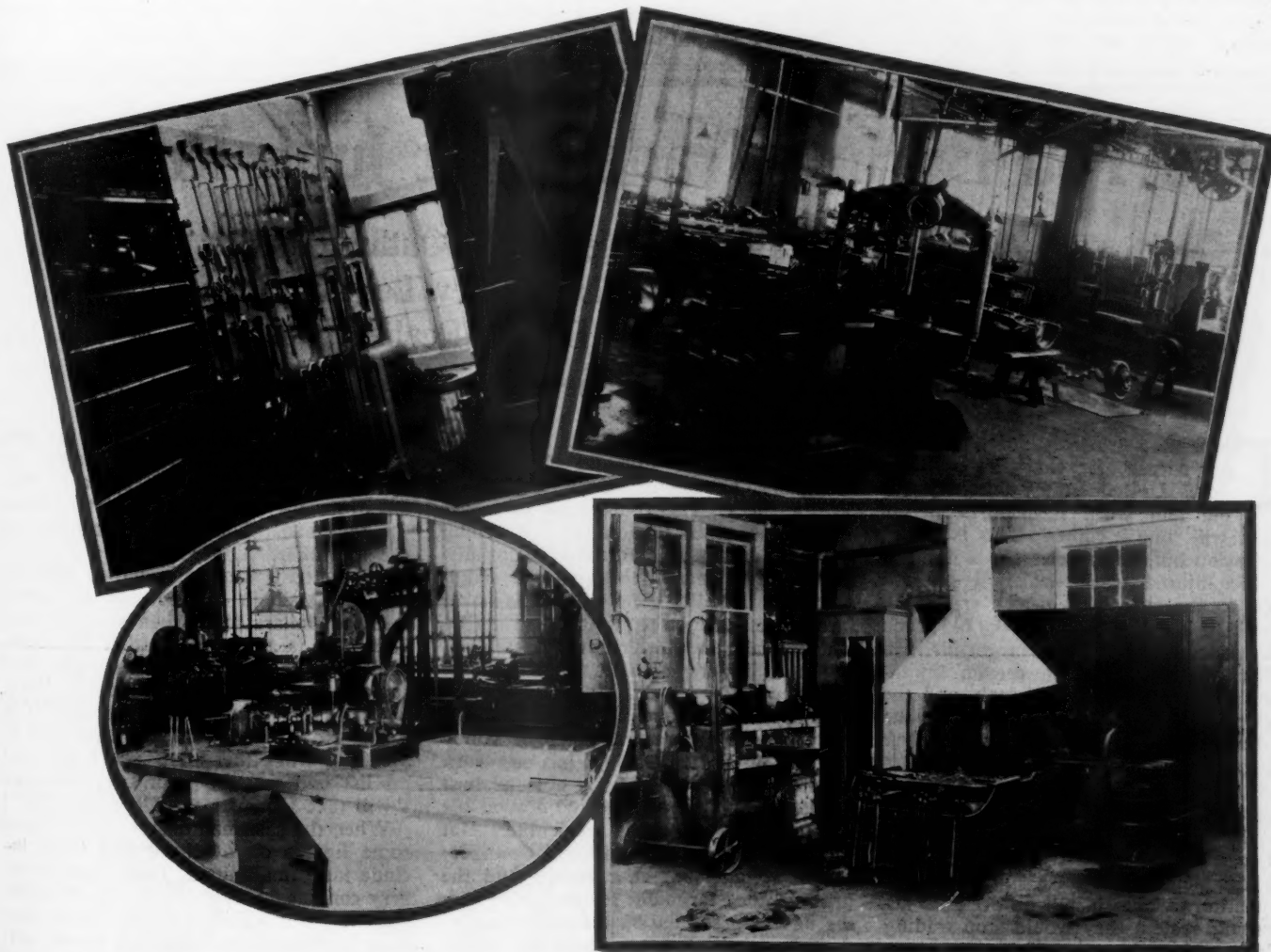
cleaning, a unit air is used. It is also employed quite extensively in the machine shop. Not only is air a saver in time but it removes fine particles of dust and dirt

from crevices where the kerosene and brush method is ineffective.

The machine shop, in charge of Jimmy Haines, a veteran machinist and tool maker, is very complete as may be noted from an accompanying illustration which shows but a part view of the department. Adjacent to the machine shop and near the stairway leading from the ground floor, is the valve refacing machine, a feature of which is the method of mounting. The table of the bench is 2 ft. 6 in. x 8 ft. and is cut out to allow the pedestal table of the machine to be mounted flush with the edge of the bench. Lockers with locks are built into the stand for storing the tools and attachments of the machine. A vise and a valve spring compressor is mounted on the bench.

Station is Well Lighted

Immediately to the rear of the machine are the Raybestos brake lining machines. Drop lights are over all machines. The interior of the station is well lighted by daylight and occasionally the walls and ceiling are painted white. This makes for greater production. Directly opposite the elevator is a metal runway or lubricating stand with a ratchet and pawl gear and chain to haul heavy units up the incline of the stand. Lubrication is featured. It



Upper Left: View of the Tool Room; Photograph Taken Through Window, Showing Some of the Special Tools. Upper Right: A Part View of the Machine Shop Which is Unusually Well Equipped. Oval: The Valve Machine is Built in; the Bench Which Includes Lockers for Attachments, Has Vise and Valve Spring Compressor. Lower Right: The Metal Working Department is Another Example of Complete Equipment.

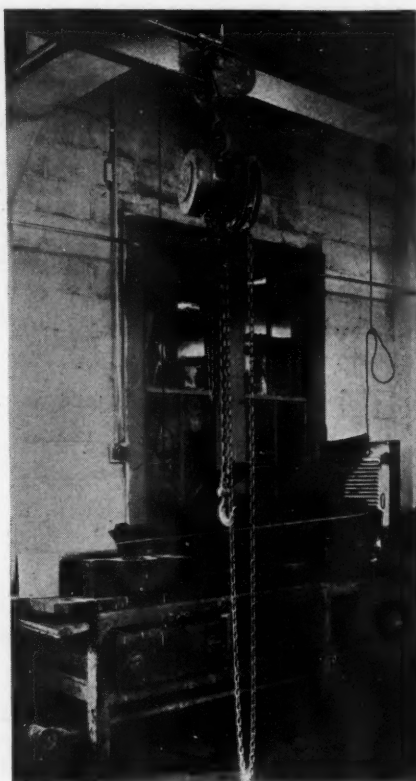
is not on a flat-rate basis, however, time and material being charged.

One corner of the floor is given over to the iron working department, there being a forge, anvil and a complete equipment of tools and appliances. The carbon and welding equipment is mounted on a wheeled carrier. The tool room is adjacent to the machine shop and an accompanying illustration taken through the opening of the window shows the use of metal bins, also the neat arrangements of the tools. Special tools, which were made up by Jimmy Haines, are all painted battleship gray and bear a black number. All tools are numbered so that the mechanics call for the number instead of specifying the tool. Some of the special truck tools are illustrated and described elsewhere in this issue. The battery apartment in the basement is equipped with Weidenhoff testing bench, growler, etc.

Has Two Wrecking Outfits

Only a few operations on trucks are on the flat-rate basis, the standard jobs such as carbon removing and valve work, etc. Brake relining is not flat-rated owing to the fact that frozen and rusty linkage must be taken into consideration, says service manager O. S. Boom. There are two wrecking outfits and night men respond to any reasonable call for service.

Equipment and supply department is located on the main floor. Tires are also handled. Solids are not sold and serv-



Overhead Trolley and Hoist Used to Remove Heavy Units From Chassis

iced, only pneumatics, as the volume of solid tire business does not warrant the installation of a tire press. Winter equipment is merchandised including alcohol for the cooling system. Gasoline and oil are also sold.

The two windows of the equipment department are dressed and at the time this article was prepared the windows were given over to a Christmas display of merchandise. As many of the trucks employ acetylene gas for lighting, the service station stocks Prest-O-Lite tanks and equipment.

Piece-Work Study Being Made

As previously stated the service station operates largely on a time and material basis but General Manager H. C. Minchin is studying the piece-work system and may give it a trial on certain operations. A most complete stock of parts is carried and all are stored in metal bins, a perpetual inventory being employed by Parts Manager George Bopp. Being within easy distance of New York, where there is a factory branch, the slower moving parts are not stocked but can be quickly obtained. The name of the company is the New England Motor Sales and this concern represents the White Line. While there is nothing unusual relative to the truck service the shop equipment is a real feature and, after all is said and done, good service cannot be provided owner unless the shop is well equipped.

Are You Buying Trade-ins at Junk Prices?

The Average Truck That is Traded-in Has Outlived Its Usefulness; It's Junk and Nothing Else. A Few Lessons From the Junk Man May Help Some Dealers Realize This Fact

By C. S. PERRIE

THE used truck is not a problem nor a case of exchanging perfectly good United States currency for old and worn mechanism if the dealer will "buy it right." This is a trite expression but, nevertheless, it is first aid to the injured truck dealer if he will stick to the rule. No dealer can make a profit if his allowances for the old truck are greater than what he can get for it in dollars and cents within certain limitations. If the old truck is junk, and the greater number traded in are, then the dealer must base his purchase on junk prices at so much per pound.

After all is said and done about the trade-in, the cure, if any, can be put over by the dealer individually. The writer believes that if those truck dealers who are complaining of their big allowance competitors would install an accurate accounting system they would stop trading wild or making big allowances. Too many dealers believe they are making money when they are just getting by or losing gradually.

There are some dealers who transact

business along sensible lines and one of these is the New England Motor Sales Company, Greenwich, Conn., agent for White trucks. This concern has been selling Whites since 1910 and is still selling them. Perhaps this concern is not disposing of as many trucks as the manufacturer would like them to, but the maker hasn't been obliged to get out and dig up a new dealer in the territory. Establishing new dealers is expensive and many times not easy.

The New England Motor Sales Company has for its general manager Harry C. Minchin and he employs but one truck salesman. The territory is not the best in which to sell trucks as the section for several miles around is residential. But sales have been made and will be made; not in volume, but at a profit. And the profit is not a large one for the writer saw the figures presented by the accountant of the company. The net profit was under five per cent. But the profit is there.

Here is how the trade-in is handled and there is no deviation from the rule. The old truck to be bought is appraised

by a man who knows his line. He sets the figure low and where it belongs. Of course there is a protest; in fact, two; one from the owner and the other from the salesman. The former is amazed at the low offer. Other dealers will do so much better. The salesman is positive that the trade-in can be sold for many hundred dollars more than the appraisal value. It is at this point that Mr. Minchin answers the owner: "All right, you say that your truck is worth more. Well, in this case my appraisal man says it is junk. Now the chassis you want lists at \$4000. I will either allow you 5 per cent off list and you sell your own truck or I will take the junk and allow you \$200."

When the salesman demurs he is shown some figures on overhead and these include his commission. These figures are very convincing when put as Mr. Minchin does it. But what about the truck that is in fairly good condition, the reader will ask! There is no such animal, according to Mr. Minchin, at least he does not find any. He avers that when the prospect

(Continued on page 78)



A Metal Wheel *that is resilient*

THE high speeds, careless driving, car tracks and cobblestones that a truck encounters cause violent jolts that tend to break down the chassis and limit its days of usefulness.

Because of its rolled steel construction, the Bethlehem Wheel combines strength to endure these jolts with resiliency to partially absorb them. As a result, the axles, differential, drive shaft and other vital unsprung parts of a truck equipped with

Bethlehem Wheels are spared much destructive wear and tear. Chassis strains are reduced. Tire life is lengthened.

The Bethlehem Wheel is built by a remarkable process from a rolled steel I-beam. It has the tremendous rugged strength of rolled steel. And it is the one metal wheel with resiliency—resiliency that lessens wear on tires and chassis and adds appreciably to their useful life.

BETHLEHEM STEEL COMPANY, BETHLEHEM, PA.

Sales Offices in the Following Cities:

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Baltimore

Boston
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Philadelphia
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Chicago

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BETHLEHEM

ROLLED STEEL TRUCK WHEELS

Arguments That Have Sold Commercial Cars

Successful Salesmen Do Not Talk Idly. They Follow Certain Well-Defined Lines of Talk. This Article is a Review of Various Points Which Have Achieved the Greatest Success

By FRANK H. WILLIAMS

RECENTLY a survey was made of some of the most successful commercial car salesmen in a middle western city of about 90,000 and in a number of the smaller towns adjacent to this city for the purpose of finding out what arguments have been most frequently used with the greatest success by these salesmen in selling trucks.

Some very interesting information was secured in this way and, undoubtedly, the information thus secured will be of interest and value to other commercial car salesmen. This information will probably give ideas to other commercial car salesmen for arguments which they themselves can effectively use in putting across sales.

Here, then, are the arguments most frequently used and most effectively used by these salesmen, all classified according to the points emphasized in the arguments:

UTILITY—1. Telling what other concerns in the same line of business as the prospect are doing with the truck. Comparing former records of these other users with present records, thus showing how much more work is being gotten out of the present trucks. 2. Fitting the trucks specifically to the business of the prospect. Showing the prospect a typical schedule for the use of a truck in his business. Showing him just how the truck will be better for his use than his present equipment. Giving a demonstration, if necessary, of the way in which the truck could cover a typical delivery route for the prospect.

EASE OF OPERATION—Showing the prospect, by actual demonstration, how easily the commercial car handles in heavy traffic. Showing the prospect just how quickly a man who is unfamiliar with the operation of the truck can learn how to handle it. Quoting from the statements made by other purchasers of the truck on this point. Citing actual statistics showing speed in pick-up, speed with which stops and starts can be made and pointing to refinements in the truck which make for easier loading, more speedy handling of the loads, etc.

PRICE—Figuring the price on a yearly basis, figuring the life of the truck to be a certain period in the prospect's business. Figuring price with relation to the low upkeep on the car. Figuring price per actual delivery made by the truck in the

course of a year and in the course of its lifetime. Figuring cost with relation to the percentage of original price at which the trucks have been locally traded in or sold when the original owners have wished to dispense with them. Figuring price on the basis of the number of miles traveled by the truck in the prospect's business each day and during the course of a year and also figuring the price with the relation to gasoline and oil consumption in the prospect's business. Figuring the value of the added prestige to the prospect of owning such a truck and figuring the value of the advertising and publicity which the prospect will get by reason of owning such a truck.

UPKEEP—Showing the prospect actual figures compiled from the records of other local owners showing actual upkeep costs, with these costs computed on a mileage basis, on a basis of the number of deliveries made, on the basis of the sort of traffic through which the trucks are handled and comparing these costs with the prospect's costs on former trucks. Quoting from the statements made by local owners of the truck telling about their complete satisfaction with the low upkeep costs of their trucks. Telling specifically just what the local truck owners have had to spend money for in keeping up their trucks—just what parts have had to be replaced, just what repair work has had to be done, just how long tires have lasted and so on.

PRESTIGE—Hammering hard on the way that the purchase of the truck will increase the prestige of the purchaser and make people feel that his business is growing splendidly and is prosperous and dwelling on the fact that when an establishment has this sort of a reputation it draws more business, because people always like to do business with a concern that is up and coming. Hammering hard on the fact that the purchase of the truck by other concerns has been of real help to them in their businesses and quoting from their statements to this effect. Telling about the way that people will talk about the prospect's new truck and of the splendidly worth while free advertising that this talking will give the prospect.

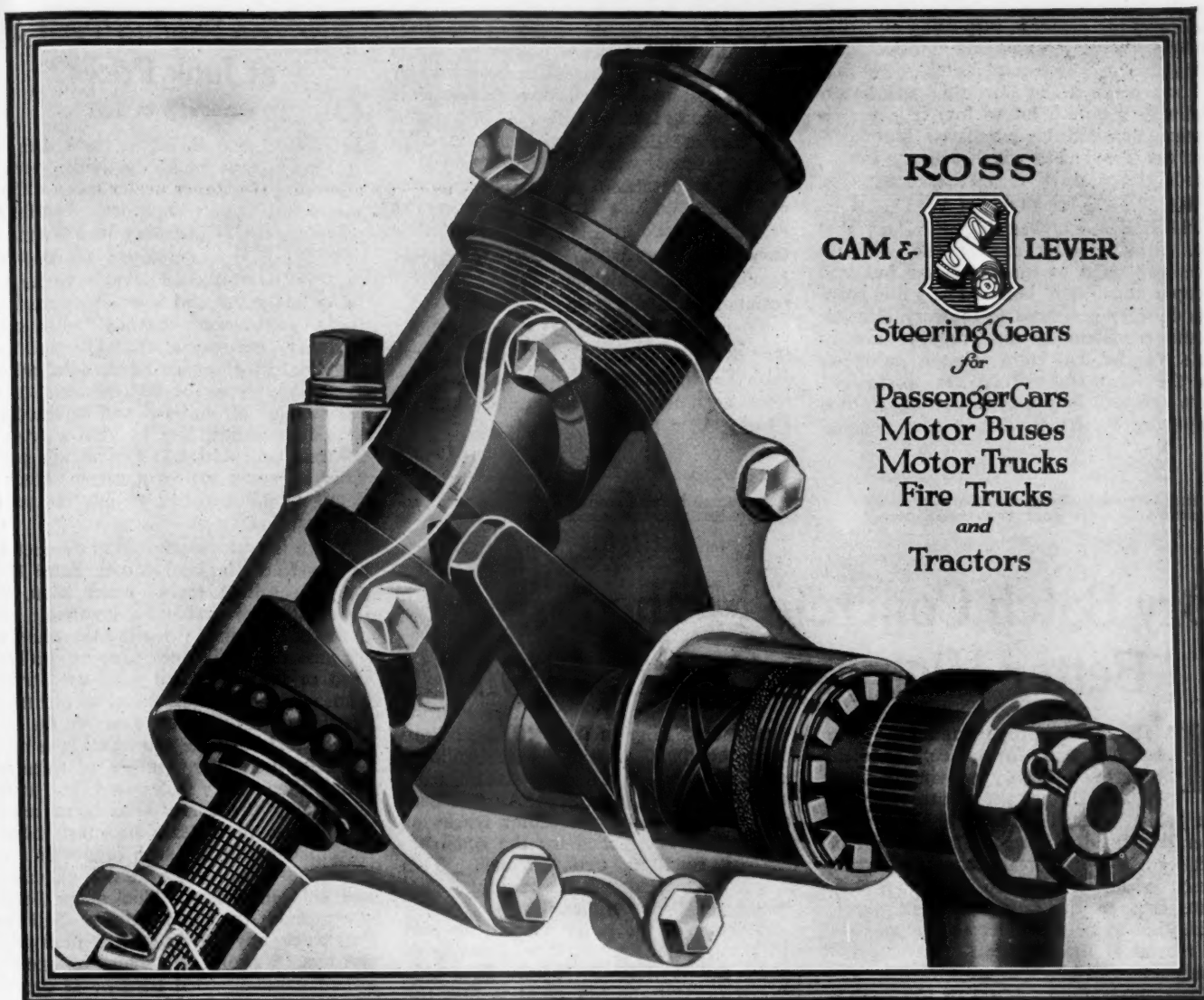
THE DEALER'S SERVICE—Telling the prospect just exactly what is included

in the dealer's service, just how complete this service is and just how satisfactory it is. Telling about the high class of the mechanics employed by the dealer. Telling about the small amount of work the dealer has to do on the trucks he sells and using this as an argument why the truck should be purchased. Telling about the speed with which the dealer handles all service. Telling about the way the dealer keeps all his promises with regard to delivery of work, doing work at the price quoted and doing work which will stand up a certain length of time. Quoting from the things said by the dealer's customers who have used his service and who have greatly appreciated it.

VALUE—Showing the prospect how much real value he is getting in buying the truck which the salesman is trying to sell to him. Taking up with the prospect some of the hidden values in the truck which would not be seen by the prospect without his attention being drawn to them. Showing the prospect how all the real value in the commercial car makes for a bigger resale value and how it cuts down maintenance costs. Showing the patron how, by making a bigger original expenditure of money, he will be saving money in the long run. Quoting from some of the things said by local purchasers of the truck with regard to the values of the truck. Emphasizing value in such a manner in all conversations with the prospect that he is really impressed by this feature of the car.

APPEARANCE—Emphasizing the good appearance of the truck. Hammering hard on the fact that the good truck appearance is a real asset to the owner and a boost for his business. Showing the prospect how the truck maker goes to special efforts in not only providing a splendid value but a truck of attractive appearance. Showing the prospect how the attractiveness of a truck harmonizes with the good appearance of his place of business and how, therefore, it is better for him to purchase this truck than some truck which isn't as presentable.

DELIVERY—Explaining that in view of the extensive business being done by the truck manufacturer why the prospect should get his order in early if he is to get immediate delivery. Pointing out the



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 Steering Gears
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Steering Revolutionized

Undreamed-of Ease in Steering
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Positive Control—Safety—Reliability

THE Ross Cam and Lever construction, with the cam's unique variable ratio, brings these and other advantages that constitute a tremendous development in steering. Already adopted by many motor-bus makers and truck manufacturers—and under test by practically the entire endustry. Write for full facts today.

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EASIER STEERING ~ LESS ROAD SHOCK

policy of the dealer in inspecting all trucks before delivery satisfying himself that they are in absolutely perfect condition. Showing the dealer how this care before delivery means a lot to him in complete satisfaction with his purchase. Emphasizing the speed with which delivery can be made if the truck is purchased at once.

KEEPING IN TOUCH WITH PURCHASERS—Emphasizing the fact that the salesman after making the sale will not lose sight of the purchaser but will keep in touch with him and help him solve his delivery problems to the very best advantage. Showing the prospect how in this way he will know what is going on in the local commercial car world and how this will help him in getting a quick buyer for his truck when it comes to the

point of reselling it. Showing the prospect how all this means money to him in learning about the condition of his car and in getting as much money as possible for it when reselling it.

These are the principal points used by the salesmen who were canvassed in making their sales of trucks. These points, of course, do not include all the sales arguments used by the salesmen but they cover the points which are used the most frequently and which achieve the greatest results in making sales.

All of which is presented in the hope that it will help other commercial car salesmen in lining up the most effective sales arguments in their minds and in putting sales over.

Are You Buying Trade-ins at Junk Prices?

(Continued from page 74)

gets ready to trade in the truck it is done for and is only junk. So junk prices are allowed. If another dealer has a different viewpoint, he gets the order. And he gets what goes with liberality in buying.

The salesman employed by the company is not a transportation engineer. But he is analytical and a constant reader of trade publications dealing with motor highway transportation. He has also compiled in compact form, data relating to various types of bodies, weights and measures of all material and commodities, thereby enabling him to give a prospect accurate information at a moment's notice. This salesman makes a careful study of detail which will be of interest to the prospect.

There is nothing unusual in the methods of the New England Motor Sales Company in selling trucks other than, perhaps, the fact that sales involving more than the appraisal price for the old truck are passed by. The company has no back-yard or building filled with used trucks. Those traded in are junked as old trucks should be. Other dealers can do the same if they will have the courage. It is better to make a smaller number of sales and profit than many sales and no profits. Eventually the dealer who is to remain in business must learn he must make a legitimate profit and such cannot be made if purchases are made at a high market and sold in a low. Too many dealers worry about their competitors. Sell your own truck, buy the trade-in at junk prices and make a profit. No man ever got rich out of handling used trucks. If there is one his name and address is unknown to the writer.

Dry Batch Concrete Method Insures Better Highway Construction

THE central proportioning or "dry batch" plan for placing cement concrete is rapidly growing popular. It appeals to the contractor and the public because it stabilizes the cost of operation for the former assuring him of a fairer and more certain margin of profit, which in turn is reflected in a lower ultimate cost to the latter, the tax payer. Then the engineer has been attracted to it by reason of the fact that it assures the construction of a better project.

One outstanding feature of the central proportioning plan is that the possibility of foreign matter finding its way into the concrete has been considerably reduced. Sand, aggregate and cement in the proper proportion are delivered from the clean hoppers of the proportioning plant, to clean dump trucks and from the trucks directly into the skip of the paver.

The central proportioning plan is being operated successfully by many contractors. An interesting example of the effectiveness of this method is brought out in the construction of approximately 5.74 miles of the Harbor Truck Boulevard, California. This is one of the heaviest hydraulic concrete highway projects in the West. It embraces a 27-ft. concrete slab on a sub-grade of decomposed granite 6 inches in thickness. The slab construction is an adaptation of the type made popular by the results of the experiments on the very recent Pittsburgh test highway. The specifications of the slab are 10 inches thick in the center, and on the edges, and 8 inches thick at the quarter points.

The contractor established his proportioning plant midway between the termini of the contracted stretch, at a point between the railroad and highway right-of-way closely adjacent to each. Many special arrangements designed to facilitate quick dispatch and uninterrupted work were established at these quarters.

A fleet consisting of from 10 to 22 Ford trucks equipped with one-batch rollover bodies traveled in a steady stream from the bunkers to the mixer. An excellent road was presented the motor trucks as the specifications called for the construction of road in two sections. This greatly facilitated the loading and discharging of their cargoes.

Naturally as the paver neared the central proportioning plant, it was unable to handle the material as rapidly as it was delivered. But the big point is that the paver was never idle even when on the extreme end of the project where each haul was comparatively long.

What does a regular daily run of 950 feet of 13½ foot pavement denote? Clock-like regularity! That every operation, whether small or large is executed with efficiency and dispatch. This was accomplished by the contractors of this project.

GMC Truck Distributor Organization Expanded

Seven new branches have been established in 1923 by the General Motors Truck Co., according to V. H. Day, general sales manager. He also said that during the same period many new distributors and dealers have been added to the sales organization. The new branches are located in Minneapolis, Denver, Pontiac, Spokane, Seattle, Milwaukee and Birmingham, Ala.

The appointment of P. H. Kelleher, of the factory sales force, to manager of the Louisville, Ky., branch is announced. Mr. Kelleher will succeed B. E. Boyes, who has been transferred to the San Francisco organization of the company.

Other changes in the sales department includes the appointment of A. J. Schamehorn and W. L. Schaffner.

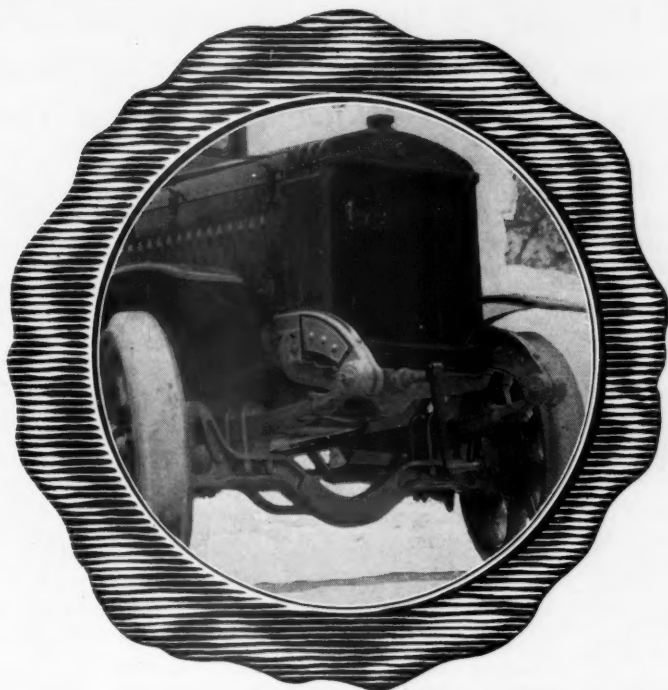
North East Electric Shows Educational Film

Combining interest with instruction, the new series of motion pictures, "Electricity in the Motor Car," produced by the North East Electric Co., Rochester, N. Y., and shown at the Rialto Theatre, New York City, January 11, proved one of the most successful of the educational films yet made. The pictures explain in detail the operating principles of electrical equipment with animated diagrams and drawings, and are further illustrated in a graphic manner by brief cartoons.

New York City Bus Speed Cut to 12 Miles Per Hour

An amendment to an existing ordinance limiting the speed of passenger omnibuses and sight-seeing cars to 12 m. p. h., has been adopted by the Board of Aldermen of New York City. The same rate has already been fixed for loaded commercial vehicles used for hauling or carting, although passenger cars are permitted to travel at a higher rate.

ACME



"We Were Not Able to Find a Better Franchise in the Motor Truck Field"

—Citizens Garage, Johnstown, Pa.

Mr. M. H. Bard, of the Citizens Garage, also said: "We especially wish to congratulate you on the co-operation which your company has given us on all occasions and the way your company has made us feel as though we were a part of the company itself. As to the profit standpoint, there is big money in the Acme Truck business and we hope to handle Acme as long as we sell any make of motor truck."

Hundreds of Acme Dealers have built up permanent, profitable, healthy growing businesses with the aid of the Acme—The Truck of Proved Units—and the thorough co-operation of the factory in selling and service afforded by the Acme Franchise.

The many improved outstanding features of the Acme assure its quick ready sale and constant repeat business. The Acme line is complete in every respect—a truck for every need—from speed truck to one of 12,500 pounds capacity.

If your territory is open—write, wire or phone for complete details of the Acme Franchise and proofs of Acme superiority.

Acme Motor Truck Company
527 Mitchell St. Cadillac, Michigan

On the radiator of every
Acme is this seal of
Dependable Performance



Trade - Mark registered
U. S. and other countries

The Truck That Moved a Town

When Acme trucks moved the entire town of Jennings, Michigan, to Cadillac, Michigan, this church, 70 feet high, was one of the hundred buildings moved. The work was done by an Acme truck and an Acme-designed trailer.



Transportation and the Motor Truck Industry

Unifying All Means of Transportation Into One Sympathetic System One of Greatest of Economic Problems Existing Today

THE urgent necessity of moving people and materials with the utmost expediency and economy obviously has a direct bearing upon the progress of the country financially, industrially and commercially, and, therefore, upon the cost of living generally.

Significant present-day developments in transportation are tending unmistakably towards better co-ordination and co-operation between the four main units: steam roads, electric railways, ships, and motor vehicles.

Out of the confusion and friction of the past, an orderly system is being gradually established, to the elimination of wasteful methods and destructive competition. Tomorrow will see a new era in this field.

The outstanding factor in the linking of railways, highways, and waterways is, of course, the rapidly expanding use of motor vehicles. Rail and water carriers are of ancient origin; the amazing growth of the motor industry has taken place in little more than a score of years, and only within the last few years have trucks and busses taken their permanent place as essential transportation units.

A Flood of Laws

The motor industry now is in the legislative period of its development; a flood of laws and proposed measures, relating to the regulation of these modern carriers of the highway, has followed in the wake of their wider utilization, and legislative hoppers in every state have been jammed with thousands of bills.

Without question there has been some wise legislation enacted with the view of promoting and encouraging this newest of giant industries; it is likewise certain that there have been passed many laws destructively restrictive.

While we are long past the days in which Iowa farmers got together in their granges to warn all members against having any business dealings whatever with owners or operators of the modern Juggernaut of the road, the "horseless buggy," there still exists, in the minds of many, misconception of the true importance of motor vehicles and of the attitude of the automotive industry towards legislation effecting its interests.

There is much comment, for example, to the effect that passenger cars, and trucks and busses, are not paying their

rightful share of taxation; that public highways are being destroyed by their use; and that unfair competition has been set up against steam and electric roads.

It is not generally understood, in other words, that the burden of assessment placed against the industry in many states has been out of all proportion to its ability to pay; that the motor vehicle has been the most powerful influence towards the building of better roads, so necessary for economic advancement; and that trucks and busses are in actuality co-operating and not competing units in the transportation system.

Taxes for Maintenance

Nor is it widely understood that, far from opposing intelligent regulation and taxation, the automotive industry has consistently advocated reasonable regulations and the imposition of taxes sufficient to cover the entire budget of State Highway Departments for the maintenance of improved highways. The United States Bureau of Public Roads reports that the total of motor vehicle taxes for 1922 was \$334,901,209; in some states the amount of such taxes far exceeded the highway maintenance budget. In this connection, it is interesting to note that one of the largest truck manufacturing companies, which has paid out a total of more than \$12,000,000 in dividends over a period of years, has also paid in excess of this sum for State and Federal taxes.

One of the striking aspects of motor vehicle legislation is the wide variation in the licensing fees of the various states, in the bases for fixing fees, and in those elements which are closely related to the cost of highway construction and maintenance, namely, weight and speed of motor trucks.

While exact uniformity of regulations and restrictions may not be possible, because of differing local conditions, it is certain that manufacturers and operators of trucks and busses, as well as highway engineers, must be given some fairly standard code, acceptable to the states as a whole, upon which the problems as to weight, speed, and tire impact, may be worked out.

It is being recognized that it is folly to bar the so-called heavy duty truck from the highways, as has been the endeavor in some states; such procedure would re-

sult in the use of two trucks instead of one, with consequent greater damage to the roadways as well as higher operating costs. In the matter of gross weight, there should be a limit, of course; the Motor Vehicle Conference Committee has submitted its proposal for 14 tons gross, and upon this basis highways of the future are likely to be built.

The chief point to be considered in connection with the highways is that they should be built to carry the necessary traffic rather than so poorly or cheaply constructed as to act as a bar to economical hauling. The public mind should be educated to consider the value of good roads from the standpoint of actual decrease in the cost of commodities, through decrease in the expense of transportation.

The value of paved highways lies in their destruction through use and not in their preservation through uneconomically restricting that use. The only possible use to which paved highways can be put whereby value received can be realized must be commercial use.

State lines should no longer be drawn in transportation matters, and legislatures should act to make uniform highway rules and regulations, together with laws as to licenses and fees, insofar as possible, for the purpose of encouraging transportation and therefore for the purpose of decreasing costs to the consumer.

Trucks Are Indispensable

Commercial motor vehicles are here to stay—they have become and will remain absolutely necessary parts of a unified and efficient transportation system—and the expansion of the facilities afforded by their use should be encouraged by reasonable legislation, rather than retarded by ill-advised prohibitions.

Upon this belief not only the manufacturers of motor vehicles are agreed, but also an increasing number of rail and water line operators, who are demonstrating, by the purchase and utilization of trucks and busses the value of these mobile units as adjuncts of their own service. In every State, the public, as the buyer of the commodity of transportation as well as the real owner of its properties, should be seeking the enactment of wise legislation to improve its trade arteries and carriers and to safeguard its tremendous investment in them.